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SOILS

Brown, William T., and others. SOIL SURVEY OF OBION COUNTY, TENNESSEE. *U.S. Dep. Agric. Soil Conserv. Ser. Soil Surv.* i + 58 p., 10 figs. + single-fold maps based on aerial photos and bound in. Jan. 1973. For sale by Supt. Documents, GPO, Washington, D.C. *WR 149: 2*

Diedrick, Raymond T., and others. SOIL SURVEY OF SWIFT COUNTY, MINNESOTA. *U.S. Dep. Agric. Soil Conserv. Serv. Soil Surv.* i + 116 p., 10 figs. + single-fold maps based on aerial photos and bound in. Feb. 1973. For sale by Supt. Documents, GPO, Washington, D.C. *WR 149: 2*

Garber, Miles C., and others. SOIL SURVEY OF LEE COUNTY, MISSISSIPPI. *U.S. Dep. Agric. Soil Conserv. Serv. Soil Surv.* i + 72 p., 10 figs. Mar. 1973. For sale by Supt. Documents, GPO, Washington, D.C. *WR 149: 2*

Garner, Dale E., and others. SOIL SURVEY OF WARREN COUNTY, OHIO. *U.S. Dep. Agric. Soil Conserv. Serv. Soil Surv.* i + 115 p., 4 figs. + single-fold maps based on aerial photos and bound in. Mar. 1973. For sale by Supt. Documents, GPO, Washington, D.C. *WR 149: 2*

Heffner, Robert L., and others. SOIL SURVEY OF MONROE COUNTY, NEW YORK. *U.S. Dep. Agric. Soil Conserv. Serv. Soil Surv.* i + 172 p., 16 figs. + single-fold maps based on aerial photos and bound in. Mar. 1973. For sale by Supt. Documents, GPO, Washington, D.C. *WR 149: 2*

Hetzler, Robert L., and others. SOIL SURVEY OF WALSH COUNTY, NORTH DAKOTA. *U.S. Dep. Agric. Soil Conserv. Serv. Soil Surv.* i + 126 p., 12 figs. + single-fold maps based on aerial photos and bound in. Sept. 1972. For sale by Supt. Documents, GPO, Washington, D.C. *WR 149: 2*

Higgins, Bradford A., and others. SOIL SURVEY OF NIAGARA COUNTY, NEW YORK. *U.S. Dep. Agric. Soil Conserv. Serv. Soil Surv.* ii + 199 p., 7 figs. + single-fold maps based on aerial photos and bound in. Oct. 1972. For sale by Supt. Documents, GPO, Washington, D.C. *WR 149: 2*

Kirby, Robert M., and others. SOIL SURVEY OF ANNE ARUNDEL COUNTY, MARYLAND. *U.S. Dep. Agric. Soil Conserv. Serv. Soil Surv.* i + 127 p., 13 figs. + single-fold maps based on aerial photos and bound in. Feb. 1973. For sale by Supt. Documents, GPO, Washington, D.C. *WR 149: 2*

Kopas, Frank A. SOIL SURVEY OF FAYETTE COUNTY, PENNSYLVANIA. *U.S. Dep. Agric. Soil Conserv. Serv. Soil Surv.* i + 108 p., 7 figs. + single-fold maps based on aerial photos and bound in. Mar. 1973. For sale by Supt. Documents, GPO, Washington, D.C. *WR 149: 2*

SOILS--Continued

McGee, Dale A., and others. SOIL SURVEY OF CLARK COUNTY, WASHINGTON. *U.S. Dep. Agric. Soil Conserv. Serv. Soil Surv.* i + 113 p., 18 figs. + single-fold maps based on aerial photos and bound in. Nov. 1972. For sale by Supt. Documents, GPO, Washington, D.C. *WR 149: 3*

Newland, Claude T. SOIL SURVEY OF CRAIG COUNTY, OKLAHOMA. *U.S. Dep. Agric. Soil Conserv. Serv. Soil Surv.* i + 65 p., 9 figs. + single-fold maps based on aerial photos and bound in. Apr. 1973. For sale by Supt. Documents, GPO, Washington, D.C. *WR 149: 3*

Newton, John H., and others. SOIL SURVEY OF MADISON COUNTY, KENTUCKY. *U.S. Dep. Agric. Soil Conserv. Serv. Soil Surv.* i + 103 p., 12 figs. + single-fold maps based on aerial photos and bound in. Mar. 1973. For sale by Supt. Documents, GPO, Washington, D.C. *WR 149: 3*

Pregitzer, Karl E., and others. SOIL SURVEY OF OTTAWA COUNTY, MICHIGAN. *U.S. Dep. Agric. Soil Conserv. Serv. Soil Surv.* i + 139 p., 13 figs. + single-fold maps based on aerial photos and bound in. Dec. 1972. For sale by Supt. Documents, GPO, Washington, D.C. *WR 149: 3*

Richlen, Ellsworth M., and Freeman R. Stephens. SOIL SURVEY OF THE SOUTH UMPQUA AREA, OREGON. *U.S. Dep. Agric. Soil Conserv. Serv. Soil Surv.* i + 60 p., 12 figs. + single-fold maps based on aerial photos and bound in. Apr. 1973. For sale by Supt. Documents, GPO, Washington, D.C. *WR 149: 3*

Stevens, Joe G., and others. SOIL SURVEY OF BERRIEN AND LANIER COUNTIES, GEORGIA. *U.S. Dep. Agric. Soil Conserv. Serv. Soil Surv.* 66 p., 10 figs. + single-fold maps based on aerial photos and bound in. May 1973. *WR 149: 3*

Wagner, Billy J., and others. SOIL SURVEY OF ERATH COUNTY, TEXAS. *U.S. Dep. Agric. Soil Conserv. Serv. Soil Surv.* i + 82 p., 26 figs. + single-fold maps based on aerial photos and bound in. Jan. 1973. For sale by Supt. Documents, GPO, Washington, D.C. *WR 149: 3*

Wheeler, Frankie F., and others. SOIL SURVEY OF OCHILTREE COUNTY, TEXAS. *U.S. Dep. Agric. Soil Conserv. Soil Surv.* i + 47 p., 16 figs. + single-fold maps based on aerial photos and bound in. Jan. 1973. For sale by Supt. Documents, GPO, Washington, D.C. *WR 149: 3*

Whitaker, Orville J. SOIL SURVEY OF GRAYSON COUNTY, KENTUCKY. *U.S. Dep. Agric. Soil Conserv. Serv. Soil Surv.* i + 81 p., 15 figs. + single-fold maps based on aerial photos and bound in. Dec. 1972. For sale by Supt. Documents, GPO, Washington, D.C. *WR 149: 3*

GENERAL CONSERVATION

Potter, Dale R., Kathryn M. Sharpe, and John C. Hendee. HUMAN BEHAVIOR ASPECTS OF FISH AND WILDLIFE CONSERVATION / AN ANNOTATED BIBLIOGRAPHY. *USDA For. Serv. Gen. Tech. Rep.* PNW-4. ii + 288 p. 1973. Available from Pacific Northwest Forest & Range Exp. Stn., P.O. Box 3141, Portland, Oreg. 97208. *WR 149: 3*

Abstract: The bibliography covers nonbiological or human behavior aspects of fish and wildlife conservation including sportsman characteristics, safety, law enforcement, professional and sportsman education, nonconsumptive uses, economics, and history. There are 995 references from 218 different sources. Also included are a list of reference sources used, an author index, and keywords, along with a keyword index.

PLANTS--GENERAL, ECOLOGY, TECHNIQUES

Farrell, J. A. K. A TOOL FOR RANDOM SAMPLE LOCATION IN FIELD PLOTS. *New Zealand J. Agric. Res.* 15(4): 911-912, illus. 1972. [From Biol. Abstr. 55(8), 1973.] *WR 149: 4*

[DSIR, Nelson, New Zealand.] A device for the location of randomly selected sampling points using polar co-ordinates originating at a central point is described.

WILDLIFE--BIOTAS, ECOLOGY, NATURAL HISTORY

Amerson, A. B., Jr. THE NATURAL HISTORY OF FRENCH FRIGATE SHOALS, NORTHWESTERN HAWAIIAN ISLANDS. *Atoll Res. Bull.* 150: 1-383. 1971. [From J. Mammal. 53(4, suppl.), 1972.] *WR 149: 4*

Bullock, J. A. FAUNA OF GUA ANAK TAKUN. *Malay Nat. J.* 24(2): 95-97. 1971. [From Biol. Abstr. 54(11), 1972.] *WR 149: 4*

[Univ. Malaya, Kuala Lumpur, Malaysia.]

Divoky, George Joseph. THE PELAGIC BIRDS AND MAMMALS OF THE CHUKCHI SEA IN FALL. *M.S. thesis, Michigan State Univ.* 97 p. 1972. *WR 149: 4*

Courtesy/ James C. Bartonek.

Groth, Helmut. DER WILDBESTAND IN EILENRIEDE UND TIERGARTEN. [THE WILDLIFE STOCK IN EILENRIEDE AND THE ZOOLOGICAL PRESERVE.] *Beih. Ber. Naturhist. Ges. Hannover* 7. p. 179-193, illus. 1971. [From Biol. Abstr. 55(8), 1973. In German.] *WR 149: 4*

[Hans Boecker Allee 53, Hannover, Germany.]

Hibbard, Edmund Arthur. VERTEBRATE ECOLOGY AND ZOOGEOGRAPHY OF THE MISSOURI RIVER VALLEY IN NORTH DAKOTA. *Ph.D. thesis, N. Dak. State Univ.* 229 p. 1972. [From Diss. Abstr. Int. B Sci. Eng. 33(9), 1973.] *WR 149: 4*

Ishunin, G. I., and T. A. Pavlenko. [SIGNIFICANCE OF ANTHROPOGENIC FACTORS IN THE FORMATION OF FAUNAL COMPLEXES IN THE FERGANA VALLEY.] *Uzb. Biol. Zh.* 15 (5): 40-42. 1971. [From Biol. Abstr. 55(1), 1973. In Russian with Uzbek summ.] *WR 149: 4*

[Inst. Zool. Parasitol., Acad. Sci. Uzb. SSR, Tashkent, USSR.]

Kaiser, Gary W., Leonard P. Lefkovitch, and Henry F. Howden. FAUNAL PROVINCES IN CANADA AS EXEMPLIFIED BY MAMMALS AND BIRDS: A MATHEMATICAL CONSIDERATION. *Canadian J. Zool.* 50(8): 1087-1104, illus. 1972. [From Biol. Abstr. 55(4), 1973. In English with French summ.] *WR 149: 4*

[Canadian Wildl. Serv., Ottawa, Ontario, Canada.]

Nadchatram, M. A BRIEF ACCOUNT OF THE NATURAL HISTORY OF TAMAN RIMBA TEMPLER (TEMPLER PARK). *Malay Nat. J.* 24(3/4): 139-147, illus. 1971. [From Biol. Abstr. 55(8), 1973.] *WR 149: 4*

[Inst. Med. Res., Kuala Lumpur, Malaysia.]

Scharf, William C. BIRDS AND LAND VERTEBRATES OF SOUTH MANITOU ISLAND. *Jack-Pine Warbler* 51(1): 2-19, illus. Mar. 1973. *WR 149: 4*

[Northwestern Mich. Coll., Traverse City.] Five amphibian, 5 reptile, 179 bird, and 10 mammal species are recorded from the island.--From summ.

Schnell, Paul. DIE WIRBELTIERE DER DORMAGENER RHEINAUE, OBERKASSELER AUE UND LINKSRHEINISCHEN NIEDERTERRASSENEBENE ZWISCHEN WORRINGEN UND NEUSS. [THE VERTEBRATES OF THE DORMAGENER RHEINAU, OBERKASSELER AUE AND LEFT RHENISH LOWER TERRACE LEVEL BETWEEN WORRINGEN AND NEUSS.] *Decheniana* 123(1/2): 147-163, illus. 1970 (1971). [From Biol. Abstr. 55(5), 1973. In German.] *WR 149: 4*

[Rotsch 3, Stolberg, Germany.]

Schnell, Waltraud, and Paul Schnell. DIE WIRBELTIERE IM OSTTEIL DES KREISES KEMPEN-KREFELD. [THE VERTEBRATES IN THE EASTERN PART OF THE KEMPEN-KREFELD AREA.] *Decheniana* 123(1/2): 199-222, illus. 1970(1971). [From Biol. Abstr. 55(5), 1973. In German.] *WR 149: 5*
[Rotsch 3, Stolberg, Germany.]

Turcek, Frantisek J. EKOLOGICKE ROZDELENIE VTAKOV A CICAVCOV NA SLOVENSKU AKO UKAZOVATELOV STRUKTURY KRAJINY. [ECOLOGICAL DISTRIBUTION OF BIRDS AND MAMMALS IN SLOVAKIA AS AN INDEX OF LANDSCAPE STRUCTURE.] *Biologia* (Bratislava) 27(2): 147-152. 1972. [From Biol. Abstr. 55(8), 1973. With English summ.] *WR 149: 5*
[Krajiny Slov. Akad. Med., Banska Stivavnica, Czechoslovakia.]

Yudin, B. S. [THE FAUNA FROM SIBERIA. PART II.] *Acad. Sci. USSR Siberian Branch Proc. Biol. Inst.* Issue 16. 376 p., illus. 1973. In Russian. *WR 149: 5*
All but about one hundred pages are devoted to invertebrates but the following should be of interest to readers of Wildlife Review: *Review on birds from the northern Kuril Islands*, A. G. Velighanin; *Paludicola* (Acrocephalus) *from the Ob River*, Yu. S. Ravkin; *Materiale on distribution and behaviour of certain birds from Siberia*, S. S. Moskvitin; *On characteristics of transarctic pigmy shrew* (Sorex cinereus *Kerr, 1792*) *from the North-East of Siberia and Kamchatka*, B. S. Yudin; *The fauna of the insectivorous mammals from Predbaikalia and Transbaikalia*, B. S. Yudin; *Pigmy shrews (Mammalia, Soricidae) from the Chany Lake Islands*, N. S. Moskvitina; *Geographical distribution of field-mouse* (Apodemus agrarius *Pall.*) *in Siberia*, A. B. Markina; *New finds of alpine fieldvoles* (Alticola macrotis *Radde*) *in North-East Altai*, T. A. Novikova, Yu. V. Drosdova, and V. I. Telegin; *Small mammals from pineforest in environs of Novosibirsk*, V. I. Telegin; *Ecologo-faunistic essay of mammals from the Abay steppe and adjoining areas*, A. F. Potapkina; *On characteristics of the fauna of mammals from the Kuril Islands*, V. G. Voronov; and *Zoogeographical essay on the fauna of mammals from Yakutia*, V. G. Krivosheev.

WILDLIFE--NATURE PROTECTION & RARE & EXTINCT SPECIES

Bauer, Gerta. LANDSCHAFTSOEKOLOGISCHE UNTERSUCHUNG DES NATURSCHUTZGEBIETES "ENTENFANG" BEI WESSELING. [STUDIES OF LANDSCAPE ECOLOGY OF THE NATURAL PROTECTION AREA "ENTENFANG" NEAR WESSELING.] *Decheniana* 123(1/2): 165-198, illus. 1970(1971). [From Biol. Abstr. 55(5), 1973. In German.] *WR 149: 5*
[Im Erkfeld 1, Richterich/Aachen, Germany.]

New Mexico. SYMPOSIUM ON RARE AND ENDANGERED WILDLIFE OF THE SOUTHWESTERN UNITED STATES / SEPTEMBER 22-23, 1972 / ALBUQUERQUE, NEW MEXICO. *N. Mex. Dep. Game Fish.* vii + 167 p., illus. [1973.] Single copies available at $3.00 from New Mexico Department of Game and Fish, State Capitol, Santa Fe. *WR 149: 5*
Contents: *The endangered species program of the Bureau of Sport Fisheries and Wildlife*, Keith M. Schreiner; *On the red wolf*, Glynn A. Riley; *The status of southwestern bat populations*, James S. Findley; *The Kaibab squirrel*, Joseph G. Hall; *Black-footed ferret-prairie dog interrelationships*, Raymond L. Linder, Robert B. Dahlgren, and Conrad N. Hillman; *The Sonoran pronghorn, an endangered species*, John N. Carr; *Ecology and management of the Mexican duck*, Charles A. Davis; *The peregrine, prairie, and aplomado falcons in the Southwest*, Frank M. Bond; *Attwater's prairie chicken*, William C. Brownlee; *Summary of research upon the Yuma clapper rail and the masked bobwhite quail*, Roy E. Tomlinson; *Other southwestern non-songbirds*, J. David Ligon; *Southwestern songbirds*, John P. Hubbard; *The bald eagle*, Alexander Sprunt IV; *The ridge-nosed rattlesnake: An endangered species*, William G. Degenhardt; Heloderma suspectum, Michael A. Williamson; *The Jemez Mountain salamander*, Plethodon neomexicanus, Stephen R. Williams; *Rare and endangered trouts of the southwest*, Robert J. Behnke; *Native fishes of the upper Gila River system, New Mexico*, James F. LaBounty and W. L. Minckley; and *Endangered non-game fishes of the upper Rio Grande Basin*, Clark Hubbs and Anthony A. Echelle.

WILDLIFE--MORPHOLOGY, PHYSIOLOGY, BEHAVIOR, MIGRATION

Hoffman, K. [THE RELATIVE EFFECTIVENESS OF ZEITGEBERS.] *Oecologia* 3: 184-206. 1969. [From Auk 90(1), 1973. In German with English summ.] *WR 149: 6*
The synchronization of the circadian cycle is called a Zeitgeber effect. Effects depend on the strength of the Zeitgeber as well as on the synchronization of its oscillation with the spontaneous circadian rhythm. Intraspecific and interspecific differences exist. A review, not restricted to birds.

Mason, C. F., R. E. Stebbings, and G. P. Winn. NOCTULES *(NYCTALUS NOCTULA)* AND STARLINGS *(STURNUS VULGARIS)* COMPETING FOR ROOSTING HOLES. *J. Zool.* 166: 467. 1972. [From Auk 90(2), 1973.] *WR 149: 6*

Schmidt-Nielsen, Knut. HOW ANIMALS WORK. *Cambridge Univ. Press.* vi + 114 p., 55 figs., 5.5 x 8.5 in. 1972. Price $5.95. *WR 149: 6*
Contents: Respiration and evaporation; Panting and heat loss; How birds breathe; Exercise, energy, and evaporation; Countercurrent, a cheap trick; and Body size and problems of scaling.

Syroechkovskii, E. V. [SOME CHARACTERISTICS OF INTERRELATIONSHIPS BETWEEN SNOW-GEESE AND THE ARCTIC FOXES ON WRANGEL ISLAND.] *Zool. Zh.* 51(6): 1208-1213. 1972. [From Biol. Abstr. 55(9), 1973. In Russian with English summ.] *WR 149: 6*
[Moscow State Univ., Moscow, USSR.]

WILDLIFE--POLLUTION

Bradfield, Paul Leslie. ROBIN POPULATION CHANGES AND PESTICIDE TRANSFORMATIONS AFTER METHOXYCHLOR REPLACES DDT FOR CONTROL OF DUTCH ELM DISEASE. *Ph.D. thesis, Mich. State Univ.* 66 p. 1972. [From Diss. Abstr. Int. B Sci. Eng. 33 (9), 1973.] *WR 149: 6*
After Michigan State University changed from DDT to methoxychlor in 1964 to protect campus elms from Dutch elm disease, robin *(Turdus migratorius)* mortality decreased but continued for six years due to the persistence of DDT in the earthworms.

Call, Daniel John. EFFECTS OF DIELDRIN AND SELECTED POLYCHLORINATED BIPHENYLS UPON JAPANESE QUAIL *(COTURNIX COTURNIX JAPONICA)* AND THEIR EGGS. *Ph.D. thesis, Univ. S. Dak.* 90 p. 1972. [From Diss. Abstr. Int. B. Sci. Eng. 33 (11), 1973.] *WR 149: 6*

Chambers, Robert Eoff. DDT, SOCIAL STRESS AND THE ADRENAL CORTEX IN MALE RABBITS. *Ph.D. thesis, Ohio State Univ.* 173 p. 1972. [From Diss. Abstr. Int. B Sci. Eng. 33(11), 1973.] *WR 149: 6*

Cooke, A. S. SHELL THINNING IN AVIAN EGGS BY ENVIRONMENTAL POLLUTANTS. *Environ. Pollut.* 4(2): 85-152, 3 figs. Feb. 1973. *WR 149: 6*
[Monks Wood Exp. Sta., Abbots Ripton, Huntingdon, England.] Review paper.

Dale, I. M., M. S. Baxter, J. A. Bogan, and W. R. P. Bourne. MERCURY IN SEABIRDS. *Mar. Pollut. Bull.* 4(5): 77-79. May 1973. *WR 149: 6*
[Univ. Glasgow, Glasgow, Scotland.] Abstract: Concentrations of mercury in the liver of birds around the British coast vary from very low levels of 0.7 ppm in a young guillemot to 122 ppm in a red-breasted merganser. Eiders which feed on mussels known to accumulate mercury also have high concentrations of this pollutant.

Damalas, A. P. MONITORING CO_2 EVOLUTION FROM MERCURY TREATED AND NATURAL FOREST SOILS. *M.S. thesis, Va. Polytech. Inst.* 190 p. 1973. *WR 149: 6*
Courtesy/ Burd S. McGinnes.

Delsaut, M., J. L. Dujardin, and J. Godin. DÉCOMPTE D'OISEAUX MAZOUTÉS DU 27 MARS 1970 AU CAP GRIS-NEZ. [LOSSES OF OILED BIRDS ON 27 MARCH 1970 AT THE GRIS-NEZ CAPE.] *Héron* 3: 17-18. 1970. [From Auk 90(2), 1973. In French.] *WR 149: 6*

Dunstan, Thomas C., Yvonne A. Greichus, and Gerald M. Polcyn. ORGANO-CHLORINE INSECTICIDES AND POLYCHLORINATED BIPHENYLS IN A ROSS' GOOSE. *S. Dak. Bird Notes* 25(1): 4-5, 1 fig. Mar. 1973. *WR 149: 7*

[Western Ill. Univ., Macomb.] "Small quantities of dieldrin, and DDE were found in the fatty tissue but only DDE was detected in the breast muscle. The amounts found were negligible indicating that this individual was relatively free of insecticide. PCB was very low."

Haegele, M. A., and Rick H. Hudson. DDE EFFECTS ON REPRODUCTION OF RING DOVES. *Environ. Pollut.* 4(1): 53-57. Jan. 1973. *WR 149: 7*

[Denver Wildl. Res. Cent., Denver, Colo.] Abstract: Reproductive performance was measured for 126 days in twelve pairs of ring doves *(Streptopelia risoria)* fed a diet containing 40 ppm of p,p'-DDE and in twelve other pairs given untreated food. The DDE-treated doves took an average of 2.5 times longer to renest than controls, produced 13.5% fewer eggs/clutch, had 10% thinner eggs, and experienced twice as great mortality of young; all these differences were statistically significant. Hatchability was also lower but not significantly so. Control birds nested forty-nine times during the study, laying two eggs in each clutch. DDE-treated birds nested only thirty-three times, laying an average of 1.7 eggs/clutch. The combined effects of DDE on reproduction resulted in only ten young being successfully raised by DDE-treated pairs versus thirty-five being raised by controls.

Heppleston, P. B. ORGANOCHLORINES IN BRITISH GREY SEALS. *Mar. Pollut. Bull.* 4(3): 44-45. Mar. 1973. *WR 149: 7*

[Seals Res. Div. (IMER), c/o Fisheries Lab., Lowestoft, Suffolk, England.] Abstract: Further samples of the organochlorine content in tissues of grey seals, *Halichoerus grypus*, from places around the British coast, show high levels of PCBs compared with DDT and dieldrin. Greater concentrations are recorded in North Sea seals than in those from the north and west coasts.

Hough, Elizabeth J., and Mary E. Zabik. DISTRIBUTION OF MERCURY IN ORGANS OF McGRAW-MALLARD DUCKS GIVEN METHYL MERCURY CHLORIDE. *Poultry Sci.* 51(6): 2101-2103, 1 fig. Nov. 1972. *WR 149: 7*

[Mich. State Univ., East Lansing.] Abstract: Heart, brain, liver, kidney, breast, and thigh tissues of McGraw-Mallard ducks which had been given oral doses of methyl mercury chloride ranging from 0 to 19 mg. MeHg/kg. body weight were analyzed for total mercury by atomic absorption techniques. Kidney and liver accumulated the highest levels of mercury and the rate of increase with increasing levels of MeHg administered was higher than the levels in the other tissues. Mercury levels in breast, thigh, brain, and heart were not significantly different. Regression equations for all six tissues are illustrated.

Kazama, T. [MASS DESTRUCTION OF *SYNTHLIBORAMPHUS ANTIQUUS* BY OIL POLLUTION OF JAPAN SEA.] *Misc. Rep. Yamashina's Inst. Ornithol.* 6: 389-398. 1971. [From Auk 90(2), 1973. In Japanese with English summ.] *WR 149: 7*

Koivusaari, J., I. Nuuja, R. Palokangas, and V. Vihko. DECREASE IN EGGSHELL THICKNESS OF THE WHITE-TAILED EAGLE IN FINLAND DURING 1884-1971. *Ornis Fenn.* 49: 11-13. 1972. [From Auk 90(2), 1973.] *WR 149: 7*

Average of nine eggs from 1967-71 showed highly significant decrease of shell thickness compared to 52 eggs from 1884-1935; the presence of polychlorinated hydrocarbons found in recent eggs is suggested as possible cause of the phenomenon.

Kreitzer, J. F. THICKNESS OF THE AMERICAN WOODCOCK EGGSHELL, 1971. *Bull. Environ. Contam. Toxicol.* 9(5): 281-286. May 1973. *WR 149: 7*

[Patuxent Wildl. Res. Cent., Laurel, Md.] Summary: Eggs or empty shells of the American woodcock were collected from 10 states in 1971 and shell thickness (mean of clutch means) was compared with that of eggs collected from 16 states during the years 1859-1939. The 1971 shells (n = 91) from hatched eggs or those

containing fully developed embryos were about 10 percent thinner ($P < 0.001$) than both unembryonated shells ($n = 26$) from the same year and the 1859-1939 shells ($n = 169$) from essentially unembryonated eggs. The difference is attributed to the transfer of calcium from the shells to the embryos and not to environmental pollutants.

Leppakoski, E. EFFECTS OF AN OIL SPILL IN THE NORTHERN BALTIC. *Mar. Pollut. Bull.* 4(6): 93-94, 1 fig. June 1973. *WR 149: 8*

[Univ. Turku, Turku, Finland.] Abstract: Oil pollution from the tanker Palva which ran aground in Finnish waters in 1969 provides an example of the hazards of oil spills in cold waters. The Palva incident and its aftermath were studied by Finnish biologists and some of their findings are reported here. The chief casualties were eider ducks, but fortunately long-term effects appear to have been small.

Lincer, Jeffrey L., and David B. Peakall. PCB PHARMACODYNAMICS IN THE RING DOVE AND EARLY GAS CHROMATOGRAPHIC PEAK DIMINUTION. *Environ. Pollut.* 4(1): 59-68, 3 figs. Jan. 1973. *WR 149: 8*

[Cornell Univ., Ithaca, N.Y.] Abstract: Ring doves *(Streptopelia risoria)* were maintained on a daily dietary dose of 10 ppm of the polychlorinated biphenyl (PCB), Aroclor 1254. Sequential sampling and residue analysis of eggs indicated a linear increase in PCB levels until approximately 105 days, after which an asymptote was reached at 80 ppm, oven dried weight (OD). At equilibrium PCB residues (ppm, OD) were as follows: fat 797, liver 51.8, muscle 28.1, brain 25.4, faeces 2.27. At death, following starvation stress, residue levels increased by the following factors: liver 78, muscle 25, brain 56, faeces 5.5. No differential toxicity attributable to PCB mobilisation was observed in experimentals compared with controls. Experimental birds tended to lose relatively more weight than the controls. The high levels in the livers of our starvation-stressed birds compared with those found in the livers of seabirds involved in the Irish Sea kill suggests that PCB was not the primary factor in their death. Early gas-liquid chromatography peaks showed considerable diminution in all samples compared with Aroclor 1254 standard and this was particularly marked in muscle and fat samples.

Mahoney, Joseph James. BODY STORAGE OF DDE AND DDT AND THEIR EFFECTS ON MIGRATORY PHYSIOLOGY AND BEHAVIOR IN THE WHITE-THROATED SPARROW, *ZONOTRICHIA ALBICOLLIS*. *Ph.D. thesis, Univ. Ga.* 101 p. 1972. [From Diss. Abstr. Int. B Sci. Eng. 33(9), 1973.] *WR 149: 8*

Mitchell, Alan. DUTCH ELM DISEASE AND BIRDS. *Bird Study* 20(1): 84-87. Mar. 1973. *WR 149: 8*

[Gorse Cottage, Jubilee Lane, Boundstone, Farnham, Surrey, England.]

Mitchell, George J., Sotirios Hontzeas, and Wendy Cameron. ACCUMULATION OF STRONTIUM-90 IN PRONGHORN ANTELOPE *(ANTILOCAPRA AMERICANA AMERICANA)* FEMALES IN ALBERTA. *Canadian J. Zool.* 50(2): 213-216. 1972. [From J. Mammal. 53(4, suppl.), 1972.] *WR 149: 8*

Moriarty, F. PESTICIDES AND WILDLIFE: RETROSPECT AND PROSPECT. *Organ. Eur. Mediterr. Prot. Plant Bull.* 4: 51-63, illus. 1972. [From Biol. Abstr. 55(4), 1973. In English with French summ.] *WR 149: 8*

[Monks Wood Exp. Sta., Huntingdon, England.] The effects are described of organochlorine insecticides on 2 indigenous British species of wildlife: the peregrine falcon *(Falco peregrinus* Tunstall*)* and the small tortoiseshell butterfly *(Aglais urticae* [L.]*)*. Four conclusions are drawn about the effect of pesticides on wildlife, which are then used to consider the possible risks from organophosphorus insecticides.

Nathan, A. J. A DOUBLE MARINE DISASTER. *Sea Frontiers* 18: 202-209. 1972. [From Auk 90(2), 1973.] *WR 149: 8*

Describes efforts of the South African National Foundation for the Conservation of Coastal birds (SANCOB) to save 1,200 oil-soaked jackass penguins *(Spheniscus demersus)* from starvation after the 1971 Wafra tanker disaster off the coast of South Africa.

Newton, I. SUCCESS OF SPARROWHAWKS IN AN AREA OF PESTICIDE USAGE. *Bird Study* 20(1): 1-8. Mar. 1973. *WR 149: 9*

[Nature Conservancy, 12 Hope Terrace, Edinburgh, Scotland.] Summary: In 1971 only a fifth of 113 hen Sparrowhawks in a 500 km.^{2} study area in southern Scotland hatched all their eggs successfully, two-fifths lost at least one egg, another fifth lost all their eggs, and the remaining fifth failed to lay. Besides non-breeding, the main causes of failure were thin egg-shells, egg-breakage, and embryonic deaths. These factors together reduced the potential output of young in the population by 56%, and other factors (including direct human intervention) by another 5%. On their present scale, the important factors have all been attributed by various authors to the presence in the birds of sublethal levels of certain pesticides. Substantial organo-chlorine residues were found in all ten eggs from the study area that were analysed. Egg-shells collected in 1971 weighed 17% less than shells collected in the same general area in 1900-1940, yet no parallel reduction in the size of shells had taken place. In the study area, the proportion of occupied Sparrowhawk sites increased between 1967 and 1971, but the proportion of pairs producing young, and the mean brood size in successful nests, remained consistently low.

Nishimura, Masakazu, Norimoto Urakawa, and Miyoshi Ikeda. AN AUTORADIOGRAPHIC STUDY ON THE DISTRIBUTION OF MERCURY AND ITS TRANSFER TO THE EGG IN THE LAYING QUAIL. *Japanese J. Pharmacol.* 21(5): 651-659, illus. 1971. [From Biol. Abstr. 55(9), 1973.] *WR 149: 9*

[Univ. Tokyo, Tokyo, Japan.]

Office of Water Resources Research. ESTUARINE POLLUTION / A BIBLIOGRAPHY. *Water Resour. Sci. Inf. Cent.* WRSIC 73-205. iv + 504 p. (variously paged). Apr. 1973. *WR 149: 9*

Complete with bibliography, significant descriptor index, comprehensive index and author index.

Office of Water Resources Research. OIL SPILLAGE / A BIBLIOGRAPHY / VOLUME 1. *Water Resour. Sci. Inf. Cent.* WRSIC 73-207. iv + 387 p. May 1973. *WR 149: 9*

Complete with bibliography, significant descriptor index, comprehensive index and author index.

Office of Water Resources Research. OIL SPILLAGE / A BIBLIOGRAPHY / VOLUME 2. *Water Resour. Sci. Inf. Cent.* WRSIC 73-207. iv + 446 p. May 1973. *WR 149: 9*

This volume supplements the above and includes abstracts of papers published in 1971-1972.

Percival, Henry Franklin. CONCENTRATIONS OF SELECTED CHLORINATED HYDROCARBONS IN BOBWHITE QUAIL AND NATURAL QUAIL FOODS WITH NOTES OF EFFECTS ON REPRODUCTION. *Ph.D. thesis, Clemson Univ.* 99 p. 1972. [From Diss. Abstr. Int. B Sci. Eng. 33(11), 1973.] *WR 149: 9*

Rothstein, Stephen I. EGGSHELL THICKNESS AND ITS VARIATION IN THE CEDAR WAXWING. *Wilson Bull.* 84(4): 469-474. Dec. 1972. *WR 149: 9*

[Univ. Calif., Santa Barbara.] Summary: Eggshell thickness in the Cedar Waxwing was analyzed in relation to various factors and the existence of important natural variation was demonstrated. Eggs from small clutches have thicker shells than eggs from large clutches. Embryonic development results in a thinning of the shell. Five other factors failed to significantly correlate with shell thickness. Recent waxwing eggs appear to have slightly (3.2 per cent) thinner shells than eggs collected before 1920. The possible significance of these findings to clutch size determination and other factors as well as to pesticide studies is discussed.--Courtesy/ Paul A. Stewart.

Saschenbrecker, P. W. LEVELS OF DDT AND PCB COMPOUNDS IN NORTH ATLANTIC FIN-BACK WHALES. *Canadian J. Comp. Med.* 37(2): 203-206, 1 fig. Apr. 1973. In English with French summ. *WR 149: 9*

[Guelph Area Lab., 620 Gordon Street, Guelph, Ontario, Canada.] Abstract: DDT and polychlorinated biphenyl (PCB) compounds were found in blubber tissue

samples of 12 North American fin-back whales collected in 1970 and 1971. Concentrations of DDT and metabolites ranged up to 2.557 ppm, while the highest PCB concentration was 0.185 ppm. Gas chromatographic results were confirmed by chemical derivatization.

Vohra, Pran. FLUORIDE TOLERANCE OF JAPANESE QUAIL. *Poultry Sci.* 52(1): 391-393. Jan. 1973. *WR 149: 10*
[Univ. Calif., Davis.] Abstract: A level of 50 p.p.m. fluoride ion in the form of sodium fluoride in the drinking water of Japanese quail had no effect on body weight, mortality, tibia weight per 100 gm. body weight, bone ash, or egg shell thickness as compared to distilled water. Levels of fluoride up to 200 p.p.m. were well-tolerated in drinking water but a level of 500 p.p.m. was lethal.

Weber, Ryland E., R. W. Hartgrove, W. C. Randolph, V. J. Petrella, and Frank Horsfall, Jr. TOXICITY STUDIES IN ENDRIN-SUSCEPTIBLE AND RESISTANT STRAINS OF PINE MICE. *Toxicol. Appl. Pharmacol.* 25(1): 42-47. May 1973. *WR 149: 10*
[Va. Polytech. Inst., Blacksburg, Va.] Abstract: Oral LD50 studies were conducted in strains of endrin-susceptible and resistant pine mice live-trapped in different apple orchards. The degree of resistance to endrin decreased in the orchard once endrin application as a control measure was terminated. Endrin-resistant mice showed a 2-fold degree of cross-resistance to dieldrin and an absence of cross-resistance to the organophosphate Gophacide and to the indirect anticoagulant chlorophacinone. Both Gophacide and chlorophacinone were more lethal to the endrin-resistant mice. Endrin toxicity studies in offspring indicated the resistance is heritable in first generation progeny.

Westphal, A., and M. K. Rowan. SOME OBSERVATIONS ON THE EFFECTS OF OIL POLLUTION ON THE JACKASS PENGUIN. *Ostrich* suppl. no. 8. p. 521-526. 1971. [From Auk 90(1), 1973.] *WR 149: 10*

WILDLIFE--PARASITES & DISEASES

Amin, Omar M. A PRELIMINARY SURVEY OF VERTEBRATE ECTOPARASITES IN SOUTHEASTERN WISCONSIN. *J. Med. Entomol.* 10(1): 110-111. 31 Jan. 1973. *WR 149: 10*
[Univ. Wis.-Parkside, Kenosha.] Fifteen vertebrate hosts were found infested with 5 spp. of ticks, 6 spp. of mites, 12 spp. of fleas, 3 spp. of sucking lice, 2 spp. of biting lice, and at least 2 spp. of bot fly larvae. Of these, all mites, sucking lice, bot fly larvae, 3 fleas and 1 biting louse spp. represent new state records. Most other spp. represent new locality and/or host records in Wisconsin.--From abstr.

Ayala, Stephen C., Antonio D'Alessandro, Ronald Mackenzie, and Dario Angel. HEMOPARASITE INFECTIONS IN 830 WILD ANIMALS FROM THE EASTERN LLANOS OF COLOMBIA. *J. Parasitol.* 59(1): 52-59, 31 figs. Feb. 1973. *WR 149: 10*
[Univ. del Valle, Cali, Colombia.]

Botzler, R. G., T. F. Wetzler, and A. B. Cowan. LISTERIA IN AQUATIC ANIMALS. *J. Wildl. Dis.* 9(2): 163-170, 1 fig. Apr. 1973. *WR 149: 10*
[Univ. Mich., Ann Arbor.] *Listeria monocytogenes* was isolated from frogs, turtles, leeches, and snails.

Brummer-Korvenkontio, M., P. Saikku, P. Korhonen, and N. Oker-Blom. ARBOVIRUSES IN FINLAND / I. ISOLATION OF TICK-BORNE ENCEPHALITIS (TBE) VIRUS FROM ARTHROPODS, VERTEBRATES, AND PATIENTS. *Am. J. Trop. Med. Hyg.* 22(3): 382-389, 1 fig. May 1973. *WR 149: 10*
[Univ. Helsinki, Helsinki, Finland.]

WILDLIFE--PARASITES & DISEASES--Continued

Hubbert, William T. YERSINIOSIS IN MAMMALS AND BIRDS IN THE UNITED STATES: CASE REPORTS AND REVIEW. *Am. J. Trop. Med. Hyg.* 21(4): 458-463. 1972. [From Biol. Abstr. 55(4), 1973.] *WR 149: 11*
[Natl. Anim. Dis. Lab., Ames, Iowa.] Wild birds and rodents appear to be significant reservoirs of *Y. pseudotuberculosis*, but birds were not found infected with *Y. enterocolitica*.

Immelmann, K. [HOST SYNCHRONIZATION IN AFRICAN BROOD PARASITES.] *Oecologia* 3: 401-408. 1969. [From Auk 90(1), 1973. In German with English summ.] *WR 149: 11*

Soota, T. D., and Y. Chaturvedi. ON FIVE NEW NEMATODES FROM VERTEBRATES. *Zool. Anz.* 187(5/6): 310-317. Nov.-Dec. 1971. [From J. Mammal. 53(4, suppl.), 1972.] *WR 149: 11*

Weinstein, Paul P. PARASITOLOGY AND THE UNITED STATES PUBLIC HEALTH SERVICE: A RELATION OF A SCIENCE AND GOVERNMENT. *J. Parasitol.* 59(1): 3-14, 2 figs. Feb. 1973. *WR 149: 11*
[Univ. Notre Dame, Notre Dame, Ill.]

WILDLIFE--OTHER MORTALITY FACTORS

Sargeant, Alan B., and James E. Forbes. MORTALITY AMONG BIRDS, MAMMALS AND CERTAIN SNAKES ON 17 MILES OF MINNESOTA ROADS. *Loon* 45(1): 4-7. Spring 1973. *WR 149: 11*
[Northern Prairie Res. Cent., Jamestown, N. Dak.]

WILDLIFE--TECHNIQUES

Eisenberg, Robert M. A CRITICAL LOOK AT THE USE OF LINCOLN INDEX-TYPE MODELS FOR ESTIMATING POPULATION DENSITY. *Tex. J. Sci.* 23(4): 511-517. 1972. [From Biol. Abstr. 55(4), 1973.] *WR 149: 11*
[Rice Univ., Houston, Tex.]

Henry, Vernon G., and George H. Matschke. IMMOBILIZING EUROPEAN WILD HOGS WITH SERNYLAN. *J. Tenn. Acad. Sci.* 47(3): 81-84, illus. 1972. [From Biol. Abstr. 55(10), 1973.] *WR 149: 11*
[U.S. Forest Serv., Lufkin, Tex.]

Joubert, Eugéne. A SIMPLIFIED PUNCH-CARD SYSTEM FOR RECORDING BIOLOGICAL INFORMATION IN THE FIELD. *Madoqua* Ser. I, no. 5. p. 69-71, 1 fig. 1972. *WR 149: 11*
[Div. Nat. Conserv. & Tourism, Windhoek, South West Africa.]

Kolz, A. L., G. W. Corner, and R. E. Johnson. A MULTIPLE-USE WILDLIFE TRANSMITTER. *U.S. Fish Wildl. Serv. Spec. Sci. Rep. Wildl.* no. 163. ii + 11 p., 7 figs. 1973. For sale by Supt. Documents, GPO, Washington, D.C. *WR 149: 11*
[Denver Wildl. Res. Cent., Denver, Colo.] Abstract: A versatile wildlife monitor has been developed by combining a 164-megahertz radio-frequency transmitter with two digital integrated circuits. The design provides a basic pulsing transmitter for normal location monitoring, but simple circuit changes provide additional capabilities: monitoring of the animal's temperature, movements, or death (through either cessation of movement or a drop in body temperature), and delayed turn-on. A fully assembled circuit weighs about 11 g; adding batteries, potting, antenna, and an attachment device results in a package weighing 50-350 g, depending on operating time.

WILDLIFE--TECHNIQUES--Continued

Stafford, Donald B., editor. AERIAL REMOTE SENSING / A BIBLIOGRAPHY. *Water Resour. Sci. Inf. Cent.* WRSIC 73-215. iv + 482 p. (variously paged). Mar. 1973. *WR 149: 12*
[Clemson Univ., Clemson, S.C.] Significant descriptor index, comprehensive index, and author index supplement this bibliography.

WILDLIFE--MANAGEMENT & RESEARCH, GENERAL

Enyeart, George W. DEVELOPMENT AND MANAGEMENT OF GAME MANAGEMENT AREAS. *N. Dak. Outdoors* 35(11): 5-9, illus. May 1973. *WR 149: 12*

Fralish, James S., and Larry Theivagt. WILDLIFE BOUNTIES / U.S. & CANADA / NEW SURVEY OF BIOLOGISTS REVEALS THE EIGHT GLARING WEAKNESSES. *Ill. Audubon Bull.* no. 164. p. 32-37. Winter-Spring 1973. *WR 149: 12*
[Southern Ill. Univ., Carbondale.]

Graf, R. L. METHODS FOR DELINEATING WILDLIFE AND OTHER ENVIRONMENTAL MANAGEMENT REGIONS. *M.S. thesis, Va. Polytech. Inst.* 164 p. 1973. *WR 149: 12*
Courtesy/ Burd S. McGinnes.

Kruckenberg, Larry. GAME MANAGEMENT IN NORTH DAKOTA--A SUMMATION AND REVIEW: PART II--DEVELOPMENT OF GAME MANAGEMENT (1939-1972). *N. Dak. Outdoors* 35(9): 2-14, illus. Mar. 1973. *WR 149: 12*
Part 1 covering the period 1862-1938 is listed in *WR 148: 16.*

Lobdell, C. H. MAST: A BUDGET ALLOCATION SYSTEM FOR WILDLIFE MANAGEMENT. *Ph.D. thesis, Va. Polytech. Inst.* 227 p. 1972. *WR 149: 12*
Courtesy/ Burd S. McGinnes.

Longrie, Dean Paul. ASPECTS OF JUNEBERRY BIOLOGY, MANAGEMENT POTENTIAL AND WILDLIFE VALUE. *Ph.D. thesis, Mich. State Univ.* 81 p. 1972. [From Diss. Abstr. Int. B Sci. Eng. 33(9), 1973.] *WR 149: 12*
Increased wildlife utilization as well as rejuvenation of low vigor clumps would result from inclusion of partial cutting of low vigor juneberry stems in wildland management practices. The release of juneberry seedlings via short rotation or selective cutting of codominant trees would be desirable juneberry management resulting in aesthetic and wildlife benefits.

Marshall, R. J. A SURVEY OF LANDOWNER ATTITUDES TOWARD POSTING AND FEE HUNTING AND FISHING ON PRIVATE LAND IN SOUTHWEST VIRGINIA. *M.S. thesis, Va. Polytech. Inst.* 72 p. 1973. *WR 149: 12*
Courtesy/ Burd S. McGinnes.

Rayburn, S. B. ANALYSIS OF MAJOR FACTORS INFLUENCING DECISIONS TO ACQUIRE PUBLIC LANDS FOR WILDLIFE. *M.S. thesis, Va. Polytech. Inst.* 111 p. 1972. *WR 149: 12*
Courtesy/ Burd S. McGinnes.

WILDLIFE--PREDATION, CROP DAMAGE, CONTROL

Chapman, Brian R., and Stanley D. Casto. ADDITIONAL VERTEBRATE PREY OF THE LOGGERHEAD SHRIKE. *Wilson Bull.* 84(4): 496-497. Dec. 1972. *WR 149: 12*
[Tex. Tech State Univ., Lubbock.] Loggerhead shrikes *(Lanius ludovicianus)* were reported killing a desert massasauga rattlesnake *(Sistrurus catenatus)*, three Merriam's pocket mice *(Perognathus merriami)*, a green treefrog *(Hyla cinera)*, and a spring peeper *(H. crucifer)*.--Courtesy/ Paul A. Stewart.

Marten, Gerald G. AN OPTIMIZATION EQUATION FOR PREDATION. *Ecology* 54(1): 92-101, 7 figs. Winter 1973. *WR 149: 13*
[Univ. British Columbia, Vancouver, B.C., Canada.] Abstract: A general equation is derived for the quantity of different foods a predator consumes in response to food preference and food abundance. It is supposed the predator apportions its efforts among different search modes in order to minimize the discrepancy between actual and desired quantities of each food consumed. Included are the conflict between quantity and composition of the diet and the competition between feeding and nonfeeding activities. The properties of the equation are examined and discussed in light of the literature.--Courtesy/ Paul A. Stewart.

Mullen, David A., and Frank A. Pitelka. EFFICIENCY OF WINTER SCAVENGERS IN THE ARCTIC. *Arct. J. Arct. Inst. N. Am.* 25(3): 225-231. 1972. [From Biol. Abstr. 55(7), 1973. In English with French and Russian summ.] *WR 149: 13*
[Univ. San Francisco, San Francisco, Calif.] *"Alopex lagopus, Vulpes fulva,* and *Mustela vison."*

Powell, Roger A. A MODEL FOR RAPTOR PREDATION ON WEASELS. *J. Mammal.* 54(1): 259-263, 1 fig. Feb. 1973. *WR 149: 13*
[Univ. Chicago, Chicago, Ill.]

Redhead, R. E. ARMYWORM *(SPODOPTERA EXEMPTA)* PREDATION BY YELLOW-NECKED SPURFOWL *(PTERNISTIS LEUCOSCEPUS)* IN THE LONGIDO GAME CONTROLLED AREA. *E. Afr. Wildl. J.* 10(1): 65-66. May 1972. *WR 149: 13*
[Coll. African Wildl. Manage., P.O. Box 3031, Moshi, Tanzania.]

Schmidt, Egon. HAMSTERFUNDE IN EULENGEWOELLEN. [FINDS OF HAMSTERS IN OWL PELLETS.] *Zool. Abh.* (Dresden) 30(16): 219-222. 1971. [From Biol. Abstr. 54 (11), 1972. In German.] *WR 149: 13*
[Ornithol. Inst., Budapest, Hungary.] Finds of hamster *(Cricetus cricetus)* remnants in the pellets of *Bubo bubo, Strix aluco, Tyto alba, Athene noctua, Asio otus* and *A. flammeus* in eastern Europe are reported. It is only found in large numbers in the pellets of *B. bubo* (143 examples).

Smith, J. Maynard, and M. Slatkin. THE STABILITY OF PREDATOR-PREY SYSTEMS. *Ecology* 54(2): 384-391, 10 figs. Early Spring 1973. *WR 149: 13*
[Univ. Sussex, Falmer, Brighton, England.] Abstract: The interactions between a predator and prey species have been analyzed by computer simulation of a model in which there are discrete breeding seasons, separated by a winter during which the predator must be able to find prey at a certain minimum rate or starve. The model is intended to represent a warm-blooded vertebrate predator and its prey. The main conclusions are: (1) Coexistence of predator and prey is possible, but if so, the number of prey present will not be substantially below the equilibrium number in the absence of predators. Mutual regulation of predator and prey, with the latter substantially below the carrying capacity of the environment, is unstable. (2) Coexistence is more likely if there are differences in hunting ability between different individual predators--for example, between young and old predators. (3) Cover for the prey enables the prey species to survive the extinction of the predator, but does not make coexistence more likely.--Courtesy/ Paul A. Stewart.

WILDLIFE--REPORTS OF ORGANIZATIONS & REPORTS OF HARVESTS

New Jersey. ANNUAL REPORT OF THE DIVISION OF FISH, GAME, AND SHELL FISHERIES / FOR...JUNE 1, 1971...JULY 30, 1972. *N.J. Dep. Environ. Prot.* 42 p., illus. [1973.] *WR 149: 13*
Pages 20-29 devoted to wildlife restoration and management.

WETLANDS & WILDLIFE

Ursin, Michael J., and Linda G. Clark. LIFE IN AND AROUND THE SALT MARSHES / A HANDBOOK OF PLANT AND ANIMAL LIFE IN AND AROUND THE TEMPERATE ATLANTIC COASTAL MARSHES. *Thomas Y. Crowell Co.* (New York). xvii + 110 p., illus., 9.5 x 8.5 in. Price $4.95, paper $2.95. 1972. *WR 149: 14*

Contents: The kinds of marshes, Marine plankton, Plant life in the salt marsh, Marine invertebrates--the lower animals, Marine vertebrates--the higher animals, National wildlife refuges, Glossary of terms, and Bibliography. "The purpose of this book is twofold. First, it is intended to stimulate the layman's interest in the ecologically interesting and important environment of the salt marsh. Second, it is designed to make visits to the salt marshes more interesting, more educational, and more rewarding."

Vogl, Richard J. EFFECTS OF FIRE ON THE PLANTS AND ANIMALS OF A FLORIDA WETLAND. *Am. Midl. Nat.* 89(2): 334-347, 3 figs. Apr. 1973. *WR 149: 14*

[Calif. State Univ., Los Angeles.] Only 5 of the 35 bird spp. encountered were seen more often on the unburned site. Fire-induced bird and mammal injury or mortality was unobserved even though the burn resembled a wildfire. Birds showed no fear of the fire and some were attracted to the smoking landscape. Although some cold-blooded vertebrate mortality occurred, other herptiles survived, and alligators used the burned shore line almost exclusively. Mammal populations of burned and unburned areas appeared similar 4 months after the fire.--From abstr.

FARMLAND & WILDLIFE

Higgins, Kenneth F., and Harold A. Kantrud. INCREASING BIRD NESTING SUCCESS ON CULTIVATED LANDS. *N. Dak. Outdoors* 35(1): 18-21, illus. Mar. 1973. *WR 149: 14*

[Northern Prairie Wildl. Res. Cent., Jamestown, N. Dak.] "Ways are now available for farmers who conduct tillage operations to help produce more wildlife on their lands without adding appreciably to their normal work load. These methods were developed from information collected during bird nesting studies conducted on farmlands and from farmers themselves."

RANGELAND & WILDLIFE

Bartholomew, Bruce Monroe. THE ROLE OF ANIMALS IN THE INTERACTION BETWEEN CALIFORNIA SHRUB AND GRASSLAND COMMUNITIES. *Ph.D. thesis, Stanford Univ.* 72 p. 1972. [From Diss. Abstr. Int. B Sci. Eng. 33(9), 1973.] *WR 149: 14*

FORESTLAND--FORESTRY & ECOLOGY

McCormick, Jack. THE PINE BARRENS: A PRELIMINARY ECOLOGICAL INVENTORY. *N.J. State Mus. Rep.* no. 2. 104 p., 32 figs. Dec. 1970. Price $2.75. *WR 149: 14*

Contents: Introduction; Background information; Colonial industries and exploitation of the region; Animals of the New Jersey pine barrens; The flora of the New Jersey pine barrens; Vegetation of the central pine barrens survey area; The wading river ecosystem and great swamp lowland complexes; The plains: Pigmy forests of the wading river area; and The central pine barrens as an area for scientific study.

McCormick, Jack, and Leslie Jones. THE PINE BARRENS: VEGETATION GEOGRAPHY. *N.J. State Mus. Rep.* no. 3. vii + 71 p. of maps. Jan. 1973. Price $4.00. *WR 149: 14*

Telfer, E. S. FORAGE YIELD AND BROWSE UTILIZATION ON LOGGED AREAS IN NEW BRUNSWICK. *Canadian J. For. Res.* 2(3): 346-350, illus. 1972. [From Biol. Abstr. 55(8), 1973. In English with French summ.] *WR 149: 15*
[Canadian Wildl. Serv., Edmonton, Alberta, Canada.]

FORESTLAND--MANAGEMENT FOR & DAMAGE BY WILDLIFE

Hoover, Edward F. A WILDLIFE BRIEF FOR THE CLEARCUT LOGGING OF DOUGLAS-FIR. *J. For.* 71(4): 210-214, illus. Apr. 1973. *WR 149: 15*
[Oreg. State Univ., Corvallis.] Abstract: Objections to clearcutting of Douglas-fir in northwest Oregon have included possible detrimental effects upon wildlife. Observations recorded here show that the abiotic and vegetative changes occurring from staggered clearcut logging are temporary and beneficial to forest wildlife. Many species, from insects to big game, increase.

Komarek, E. V., Sr., chairman. PROCEEDINGS ANNUAL TALL TIMBERS FIRE ECOLOGY CONFERENCE / NUMBER 12 / 8-9 JUNE 1970 / LUBBOCK, TEXAS. *Tall Timbers Res. Stn.* (Tallahassee, Fla.). 492 p., illus. 1971. *WR 149: 15*
Includes the following papers: *Fire science at Texas Tech*, Sam E. Curl; *Comment by a co-chairman*, Oliver West; *Effects of fire on true prairie grasslands*, E. F. Smith and C. E. Owensby; *The use of fire as a management tool on the Curtis Prairie*, Roger C. Anderson; *Fire in the Black Hills forest-grass ecotone*, F. Robert Gartner and Wesley W. Thompson; *Fire ecology in ponderosa pine-grassland*, Harold F. Heady; *Burning and the grasslands in California*, Harold F. Heady; *Fire effects in southwestern semidesert grass-shrub communities*, Dwight R. Cable; *Effect of fire on shortgrass and mixed prairie species*, J. L. Launchbaugh; *Fire as a tool to manage Tobosa Grasslands*, Henry A. Wright; *A progress report on techniques to broadcast burn dozed juniper*, Henry A. Wright, Carlton M. Britton, Robert L. Wink, and Bob Beckham; *Fire in southeastern grasslands*, Richard J. Vogl; *Plant succession on burned areas in Okefenokee Swamp following the fires of 1954 and 1955*, Eugene Cypert; *Ancient fires*, E. V. Komarek, Sr.; *Effects of fire on a sand hills grassland environment*, Carl W. Wolfe; *Prescribed burning and grazing for prairie chicken habitat manipulation in the Texas coastal prairie*, Albert D. Dhamrad and J. D. Dodd; *Role of fire in mourning dove nesting ecology*, Edward C. Soutiere and Eric G. Bolen; *Prairie fires and wildlife*, Leo M. Kirsch and Arnold D. Kruse; *The habitat requirements of sage grouse and the role of fire in management*, Donald A. Klebenow; *Prescribed burning in grassland management for prairie chickens in Illinois*, Ronald L. Westemeier; *Fire in the National Parks Symposium*, W. H. Hendrickson; *Impact of prescribed burning on a sequoia-mixed conifer forest*, Bruce M. Kilgore; *A prescribed burning program for Sequoia and Kings Canyon National Parks*, Peter H. Schuft; *Restoring fire to the environment in Sequoia and Kings Canyon National Parks*, John S. McLaughlin; *Control burn activities in Everglades National Park*, Richard W. Klukas; *Effect of fire on vegetation of the Chihuahuan Desert Region*, Walter H. Kittams; and *Fire ecology in Shenandoah National Park*, Gene Wilhelm.

MAMMALS--GENERAL

Barash, David P. HABITAT UTILIZATION IN THREE SPECIES OF SUBALPINE MAMMALS. *J. Mammal.* 54(1): 247-250, 3 figs. Feb. 1973. *WR 149: 15*
[Univ. Wash., Seattle.] *"Marmota caligata, M. flaviventris,* and *Ochotona princeps."*

Barash, David P. LATITUDINAL REPLACEMENT IN HABITAT UTILIZATION OF MOUNTAIN MAMMALS. *J. Mammal.* 54(2): 535-536, 1 fig. May 1973. *WR 149: 15*
[Univ. Wash., Seattle.] *"Ochotona princeps, Marmota flaviventris,* and *Spermophilus richardsonii."*

MAMMALS--GENERAL--Continued

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[Univ. Fla., Gainesville.]

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[Dep. Vet. Hyg., Kielce, Poland.]

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[Agric. Coll. Olsztyn, Kortowo, Poland.]

Tarasoff, F. J., Andre Bisaillon, Jean Pierard, and Arville P. Whitt. LOCOMOTORY PATTERNS AND EXTERNAL MORPHOLOGY OF THE RIVER OTTER, SEA OTTER, AND HARP SEAL (MAMMALIA). *Canadian J. Zool.* 50(7): 915-929, illus. 1972. [From Biol. Abstr. 55(1), 1973. In English with French summ.] *WR 149: 16*
[McGill Univ., Montreal, Quebec, Canada.]

MAMMALS--TECHNIQUES

Burge, John R., and Clive D. Jorgensen. HOME RANGE OF SMALL MAMMALS: A RELIABLE ESTIMATE. *J. Mammal.* 54(2): 483-488. May 1973. *WR 149: 16*
[Oreg. State Univ., Corvallis.] Abstract: A method for estimating the probability of an animal being in a particular region of the home range is discussed. Data for *Perognathus longimembris* (Coues) were used to illustrate the use of this method and were transformed with $r' = (r^{\lambda}-1)/\lambda$. One-sided tolerance limits were used to assert degrees of confidence γ that given percentages of the recaptures will be within specified distances from the estimated activity center.

Contreras, Julio R. BASES ECOLOGICAS PARA EL CONTROL DEL "TUCU-TUCO" *(CTENOMYS* SP.). [MODIFICATION OF THE HABITAT AS A METHOD OF CONTROLLING THE FOSSORIAL RODENT "TUCU-TUCO" *CTENOMYS* SP.] *Zool. Platense* 1(7): 37-43. 1970. In Spanish with English summ. *WR 149: 16*
[Univ. Nac. Comahue, Pasaje Guitiérrez 998, Bariloche, Río Negro, Argentina.]

Fessl, L. ZUR MEDIKAMENTOESEN IMMOBILISATION VON WILDTIEREN. [ON THE MEDICAL IMMOBILIZATION OF WILD ANIMALS.] *Z. Jagdwiss.* 18(1): 15-23. 1972. [From Biol. Abstr. 54(11), 1972. In German with French and English summ.] *WR 149: 16*
The drugs most frequently used in the immobilization of wild cattle, deer and boar are described. Counter-medication and dosage tables for Rompun and Stresnil are given.

MAMMALS--TECHNIQUES--Continued

Hoffmeister, Donald F. A SUGGESTED METHOD OF SHIPPING SKULLS IN VIALS. *J. Mammal.* 54(1): 293-294. Feb. 1973. *WR 149: 17*
[Univ. Ill., Urbana.]

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Rodl, Pavel. PRISPEVEK K CHOVU VOLNE ZIJICICH DROBNYCH SAVCU. [CONTRIBUTION TO KEEPING SMALL WILD MAMMALS.] *Lynx* (Prague) 12: 84-89, illus. 1971. [From Biol. Abstr. 55(6), 1973. In Czech with German summ.] *WR 149: 17*
[Parazitol. Ustav, Czech. Akad. Ved., Prague, Czechoslovakia.] Iron cages recommended for *Apodemus, Micromys, Microtus, Pitymys* and *Clethrionomys.*

Sarrazin, J.-P. Raymond, and J. Roger Bider. ACTIVITY, A NEGLECTED PARAMETER IN POPULATION ESTIMATES--THE DEVELOPMENT OF A NEW TECHNIQUE. *J. Mammal.* 54(2): 369-382, 6 figs. May 1973. *WR 149: 17*
[McGill Univ., Macdonald College, Quebec, Canada.] Abstract: A combination of trapping and tracking was used to estimate population levels of the masked shrew *(Sorex cinereus)* over a 3-year period. This new technique is based on the principle of measuring the relative decrease in activity in an area due to the removal of a known number of animals. The population estimate is determined by calculating the number of shrews that would have to be removed to reduce activity to zero. The system eliminates two large families of errors that have plagued systems of population estimates. It eliminates all variables relating to changes in rates of animal activity due to climate, season, availability of food, natality, mortality, or others. It also resolves the age-old problem of calculating effective size of the trap plot. The method has built into it procedures and tests that assure adequate sample sizes.

Woodford, M. H., S. K. Eltringham, and J. R. Wyatt. AN ANALYSIS OF MECHANICAL FAILURE OF DARTS AND COSTS INVOLVED IN DRUG IMMOBILIZATION OF ELEPHANT AND BUFFALO. *E. Afr. Wildl. J.* 10(4): 279-285. Dec. 1972. *WR 149: 17*
[FAO/UNDP Wildl. Manage. Kenya, P.O. Box 30559, Nairobi, Kenya.] A breakdown of the cost of immobilizing forty elephant and twenty buffalo is given. Total costs for each animal successfully immobilized were U.Shs. 323.0 and U.Shs. 359.9 for elephant and buffalo respectively. [$1. U.S. = 7.1 U.Shs.]

MAMMALS--FAUNAS & MANUALS

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[Am. Mus. Nat. Hist., New York, N.Y.]

Chudoba, Stanislaw, and Ryszard Haitlinger. DROBNE SSAKI BESKIDU ZYWIECKIEGO. [SMALL MAMMALS OF THE ZYWIECKI BESKID MOUNTAINS.] *Acta Zool. Cracov.* 16(8): 413-433, illus. 1971. [From Biol. Abstr. 55(9), 1973. In Polish with Russian and English summ.] *WR 149: 18*

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A summary analysis of reports is presented on toponymic indications and present-day western limits of the bear, izard (Pyrenean chamois) and the ptarmigan *(Lagopus mutus)*.

Gersdorf, Erasmus. SAUEGETIERE IN DER EILENRIEDE. [MAMMALS IN THE EILENRIEDE.] *Beih. Ber. Naturhist. Ges. Hannover* 7. p. 195-202. 1971. [From Biol. Abstr. 55(8), 1973. In German.] *WR 149: 18*
[Edenst. 18, Hannover, Germany.]

Indyk, Franciszek. PRZYRODA REZERWATU MUSZKOWICKI LAS BUKOWY W WOJEWÓDZTWIE WROCŁAWSKIM. VIII. SSAKI REZERWATU MUSZKOWICKI LAS BUKOWYITERENOW PRZYLEGŁYCH. [NATURE OF THE RESERVE MUSZKOWICKI LAS BUKOWY IN THE VOIVODESHIP WROCLAW. VIII. MAMMALS OF THE RESERVE MUSZKOWICKI LAS BUKOWY AND THE ADJACENT AREA.] *Ochrona Przyrody* 37: 153-156. 1972. In Polish with English summ. *WR 149: 18*

Linzey, Donald W. MAMMALS OF MOBILE AND BALDWIN COUNTIES, ALABAMA. *J. Ala. Acad. Sci.* 41(2): 64-99. Apr. 1970. [From J. Mammal. 53(4, suppl.), 1972.] *WR 149: 18*

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[Univ. Wis., Madison.]

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[Termeszettud. Muz., Budapest, Hungary.] A list of 26 spp.

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[Cent. ORSTOM, BP 1386, Dakar, Senegal.] Ecological study of the 28 spp. of mammals found.

Schmidt, E. KLEINSAEUGERFAUNISTISCHE ANGABEN AUS DEM HERNABECKEN AUF GRUND DER GEWOELLUNTERSUCHUNGEN DER SCHLEIEREULEN, *TYTO ALBA*, SCOP. [DATA ON THE SMALL MAMMALS OF THE HERNAD BASIN ON THE BASIS OF PELLET STUDIES ON THE BARN OWL, *TYTO ALBA*, SCOP.] *Tiscbia* 6: 101-107, illus. 1970/1971. [From Biol. Abstr. 54(11), 1972. In German.] *WR 149: 18*
[Ornithol. Inst., Budapest, Hungary.]

Zalman, Jiri. DROBNI SAVCI V JIZERSKYCH HORACH V POTRAVE SOVY PALENE *(TYTO ALBA GUTTATA)*. [THE SMALL MAMMALS OF THE ISER MOUNTAIN AREA IN THE FOOD OF THE BARN OWL *(TYTO ALBA GUTTATA)*.] *Lynx* (Prague) 12: 90-91. 1972. [From Biol. Abstr. 55(3), 1973. In Czech with English summ.] *WR 149: 18*
[Okresni Muz. Praha-vychod, St. Boleslav, Brandys nad Labem, Czechoslovakia.]

MAMMALS--POPULATIONS, HOME RANGES, COMMUNITIES

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Jefferies, D. J., and M. C. French. LEAD CONCENTRATION IN SMALL MAMMALS TRAPPED ON ROADSIDE VERGES AND FIELD SITES. *Environ. Pollut.* 3(2): 147-156. Apr. 1972. [From J. Mammal. 53(4, suppl.), 1972.] *WR 149: 19*

Quinet, Philippe. INTRODUCTION A UNE ETUDE ECOLOGIQUE ET ETHOLOGIQUE DE MICROMAMMIFERES DE LA FORET DE FLORENNES. [INTRODUCTION TO AN ECOLOGICAL AND ETHOLOGICAL STUDY OF THE SMALL MAMMALS OF THE FOREST OF FLORENNES.] *Ann. Soc. Roy. Zool. Belg.* 101(3): 143-155, illus. 1971. [From Biol. Abstr. 54(11), 1972. In French with English summ.] *WR 149: 19*
[Univ. Libre Bruxelles, Brussels, Belgium.]

Schmidt, E., P. Somogyi, and G. Szentendrey. EIN VERSUCH ZUR FESTSTELLUNG DER POPULATIONSDICHTE EINIGER KLEINSAEUGER IN OFFENEN KULTURGEBIETEN AUF GRUND VON SCHLEIEREULENGEWOELLEN. [AN ATTEMPT TO DETERMINE THE POPULATION DENSITY OF SOME SPECIES OF SMALL MAMMALS IN OPEN CULTIVATED AREAS ON THE BASIS OF THE EXAMINATION OF OWL PELLETS OF THE OWL *TYTO ALBA.*] *Vertebr. Hung.* 12: 79-91, illus. 1970/1971. [From Biol. Abstr. 55(3), 1973. In German with Hungarian summ.] *WR 149: 19*
[Magy. Madartani Intez., Budapest, Hungary.]

Sinclair, A.R.E. LONG TERM MONITORING OF MAMMAL POPULATIONS IN THE SERENGETI: CENSUS OF NON-MIGRATORY UNGULATES, 1971. *E. Afr. Wildl. J.* 10(4): 287-297, 1 fig. Dec. 1972. *WR 149: 19*
[Serengeti Res. Inst., P.O. Box 3134, Arusha, Tanzania.] Summary: Long term parallel studies on animal populations can give information on problems concerning population regulation, competition and predation. So far only two populations in the Serengeti have been studied in this way. To initiate long term studies on several ungulate species an aerial transect census was carried out in 1971. The methods of counting and the statistical analysis are described in detail so that future workers can repeat the census. The results are presented for impala, topi, kongoni, giraffe, waterbuck, eland and buffalo male groups. Based upon the confidence limits of the samples, it is suggested that the next census be carried out in June 1974.

MAMMALS--PARASITES & DISEASES

Bishop, I. R. ON A COLLECTION OF SIPHONAPTERA FROM SMALL MAMMALS ON THE CHANNEL ISLANDS, 1960-61. *Entomol. Monthly Mag.* 107(1289-91): 196-198. Oct.-Dec. 1971. [From J. Mammal. 53(4, suppl.), 1972.] *WR 149: 19*

Camica, Jean-Louis, Harry Hoogstraal, and Kawther M. El Kammah. NOTES ON AFRICAN *HAEMAPHYSALIS* TICKS. XI. *H. (RHIPISTOMA) PUNCTALEACHI* SP. N., A PARASITE OF WEST AFRICAN FOREST CARNIVORES (IXODOIDEA: IXODIDAE). *J. Parasitol.* 59(3): 563-568, 20 figs. June 1973. *WR 149: 19*
[ORSTOM (Office de la Recherche Scientifique et Technique Outre-Mer), Bondy, France.]

Clark, Keith A., R. M. Robinson, L. L. Weishuhn, T. J. Galvin, and Kalman Horvath. *HEPATOZOON PROCYONIS* INFECTIONS IN TEXAS. *J. Wildl. Dis.* 9(2): 182-193, 5 figs. Apr. 1973. *WR 149: 19*
[Tex. A&M Univ., College Station.] Abstract: The literature related to *Hepatozoon* infections is reviewed; observations from the study of spontaneous hepatozoonosis in 57 raccoons *(Procyon lotor)* and one white-tailed deer *(Odocoileus virginianus)* are presented, with special reference to pathogenesis.

Coffredo, Giovanni. L'ANDAMENTO DELLA TRICHINOSI SILVESTRE IN PROVINCIA DI FOGGIA. [THE COURSE OF TRICHINOSIS IN WILD ANIMALS IN THE PROVINCE OF FOGGIA.] *Acta Med. Vet.* (Naples) 17(6): 519-526, illus. 1971. [From Biol. Abstr. 55(7), 1973. In Italian.] *WR 149: 20*
[Ist. Zooprofilattico Sper., Puglia, Italy.]

Crichton, Vincent Frederick Joseph. THE BIOLOGY OF *DRACUNCULUS* SPP. (DRACUNCULOIDEA: DRACUNCULIDAE) IN WILDLIFE FROM ONTARIO. *Ph.D. thesis, Univ. Guelph.* 1972. [From Diss. Abstr. Int. B Sci. Eng. 33(11), 1973. To obtain a microfilm copy please order directly from the National Library of Canada at Ottawa.] *WR 149: 20*
From 1969-1971, carcasses of 1147 mammals were examined for guinea worm and it was recovered from the following animals: raccoon *(Procyon lotor)*, mink *(Mustela vison)*, otter *(Lutra canadensis)*, fisher *(Martes pennanti)*, short-tailed weasel *(Mustela erminea)*, muskrat *(Ondatra zibethicus)*, and opossum *(Didelphis marsupialis)* from Ontario, Canada and badger *(Taxidea taxus)* from Manitoba.

Daniel, M., and N. Heneberg. CHIGGERS PARASITIZING SMALL MAMMALS IN THE SOUTHERN PART OF YUGOSLAVIA (ACARINA: TROMBICULIDAE). *Folia Parasitol.* (Prague) 19(2): 133-138, illus. 1972. [From Biol. Abstr. 55(2), 1973. In English with Russian summ.] *WR 149: 20*
[Parasitol. Inst., Czech. Acad. Sci., Prague, Czechoslovakia.]

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[Tulane Univ., New Orleans.]

Irvin, A. D., J. B. Sale, and R. E. Purnell. *BABESIA THOMASI* FROM ROCK HYRACES IN KENYA. *J. Parasitol.* 59(1): 203-204. Feb. 1973. *WR 149: 20*
[Inst. Res. Anim. Dis., Compton, Newbury, Berkshire, England.]

Kolman, J. M., and M. Husová. ANTIBODIES AGAINST THE TICK-BORNE ENCEPHALITIS AND THE UUKUNIEMI VIRUSES IN SMALL MAMMALS IN A MIXED NATURAL FOCUS OF DISEASES. *Folia Parasitol.* 19(1): 61-66. 1972. [From J. Mammal. 53(4, suppl.), 1972. In English with Russian summ.] *WR 149: 20*

Krishnaswami, A. K., P. C. Ravindran, R. K. Chandrahas, and C. K. Rao. SEROLOGICAL SURVEY OF SMALL MAMMALS IN THE SOUTH INDIAN PLAGUE FOCUS: II. *Indian J. Med. Res.* 60(4): 551-555. 1972. [From Biol. Abstr. 55(5), 1973.] *WR 149: 20*
[Natl. Inst. Commun. Dis., Delhi, India.]

Mrciak, Milan, and Savo Brelih. TO THE FAUNA OF MITES (GAMASOIDEA--PARASITIFORMES) OF SMALL MAMMALS IN YUGOSLAVIA. *Biológia Ser. B Zool.* 2, 27(5): 333-352. 1972. [From J. Mammal. 53(4, suppl.), 1972. In (English) with Czech summ.] *WR 149: 20*

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[Trypanosomiasis Res. Organ., Tororo, Uganda.]

Neiland, Kenneth A., and Clarice Dukeminier. A BIBLIOGRAPHY OF THE PARASITES, DISEASES AND DISORDERS OF SEVERAL IMPORTANT WILD RUMINANTS OF THE NORTHERN HEMISPHERE / REINDEER AND CARIBOU, GENUS *RANGIFER* / MOOSE, GENUS *ALCES* / SHEEP AND RELATED MOUNTAIN GAME / DEER, GENUS *ODOCOILEUS*. *Alaska Dep. Fish Game Wildl. Tech. Bull.* 3. ii + 151 p. June 1972. *WR 149: 20*

Poland, Jack D., Allan M. Barnes, and Jack J. Herman. HUMAN BUBONIC PLAGUE FROM EXPOSURE TO A NATURALLY INFECTED WILD CARNIVORE. *Am. J. Epidemiol.* 97(5): 332-337. May 1973. *WR 149: 21*
[Fort Collins Labs., CDC, P.O. Box 551, Fort Collins, Colo.] A Northern Arizona University student developed typical symptoms of bubonic plague two days after skinning a bobcat *(Lynx rufus). Yersinia pestis* subsequently was identified from the patient's right epitrochlear lymph node and from the bone marrow and brain of the bobcat.

Saikku, P. ARBOVIRUSES IN FINLAND / III. UUKUNIEMI VIRUS ANTIBODIES IN HUMAN, CATTLE, AND REINDEER SERA. *Am. J. Trop. Med. Hyg.* 22(3): 400-403, 2 figs. May 1973. *WR 149: 21*
[Univ. Helsinki, Helsinki, Finland.]

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[ORSTOM, B.P. 1386, Dakar, Senegal.]

SHREWS, MOLES, BATS

Adam, F., and B. Hubert. CHIROPTERES NOUVEAUX POUR LE SENEGAL. [CHIROPTERA NEW TO SENEGAL.] *Mammalia* 36(1): 59-70, illus. 1972. [From Biol. Abstr. 55 (1), 1973. In French with English summ.] *WR 149: 21*
[Lab. Ecol. Petits Vertebr., O.R.S.T.O.M., Dakar, Senegal.]

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[Denver Wildl. Res. Cent., Denver, Colo.]

Chase, Julia. THE ROLE OF VISION IN ECHOLOCATING BATS. *Ph.D. thesis, Ind. Univ.* 214 p. 1972. [From Diss. Abstr. Int. B Sci. Eng. 33(10), 1972. "Previously copyrighted material not microfilmed at request of author. Available for consultation at Indiana University Library."] *WR 149: 21*

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[Fort Hays Kans. State Coll., Hays.]

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Dusbabek, F. THE ZONE OF BAT ACARINIA IN CENTRAL EUROPE. *Folia Parasitol.* (Prague) 19(2): 139-154, illus. 1972. [From Biol. Abstr. 55(2), 1973. In (English) with Russian summ.] *WR 149: 22*
[Czech. Acad. Sci., Prague, Czechoslovakia.]

Dwyer, P. D., and J. A. Harris. BEHAVIORAL ACCLIMATIZATION TO TEMPERATURE BY PREGNANT *MINIOPTERUS* (CHIROPTERA). *Physiol. Zool.* 45(1): 14-21, illus. 1972. [From Biol. Abstr. 55(2), 1973.] *WR 149: 22*
[Univ. Queensland, Saint Lucia, Brisbane, Australia.]

Easterla, David Arlen. ECOLOGICAL ASPECTS OF THE 18 SPECIES OF CHIROPTERA AT BIG BEND NATIONAL PARK TEXAS. *Ph.D. thesis, Purdue Univ.* 247 p. 1972. [From Diss. Abstr. Int. B Sci. Eng. 33(9), 1973.] *WR 149: 22*

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[Smithsonian Inst., Washington, D.C.]

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[Cornell Univ., Ithaca, N.Y.] Radioisotope tracing was used to follow the movements of *Microtus pennsylvanicus* in enclosures in the natural environment. Experiments were designed to determine the effects of increasing population density and other factors on various ecological and behavioral parameters.--From abstr.

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[Baton Rouge Mental Health Cent., Baton Rouge, La.] Abstract: *Microtus pennsylvanicus* were attacked by weanling *Peromyscus* of all three species tested: *P. leucopus noveboracensis*, *P. maniculatus bairdii*, and *P. polionotus (oolemani)*. However, defensive behaviours were more frequent than aggressive behaviours. Of the three species of *Peromyscus* tested, *P. m. bairdii* are most likely to meet *Microtus* in the field and displayed more agonistic behaviours in the laboratory. Female *Peromyscus* of all species tested were as likely to engage in all agonistic behaviours as were males. Inter-generic aggression developed before intra-generic aggression.

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[Univ. Minn., Minneapolis.] *"Neotoma floridana, N. micropus, and N. angusti-palata."*

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Choate, Jerry R. IDENTIFICATION AND RECENT DISTRIBUTION OF WHITE-FOOTED MICE *(PEROMYSCUS)* IN NEW ENGLAND. *J. Mammal.* 54(1): 41-49, 2 figs. Feb. 1973. *WR 149: 27*
[Fort Hays Kans. State Coll., Hays.] Abstract: External features and quantitative cranial characteristics can be used to distinguish between *Peromyscus leucopus* and *P. maniculatus* where they occur sympatrically in New England. Discriminant function analysis was used to prepare a test by which skulls of adults of these species can be identified. Geographic and ecological distributions of white-footed mice in New England were reviewed.

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[Ventura Coll., Ventura, Calif.] *"Microtus pennsylvanicus, M. montanus, M. californicus, M. longicaudus,* and *M. ochrogaster."*

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[Univ. Nac. Comahue, Pasaje Guitiérrez 998, Bariloche, Río Negro, Argentina.]

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[Univ. Nac. Comahue, Pasaje Guitiérrez 998, Bariloche, Río Negro, Argentina.]

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[Univ. Ga., Athens.]

Dalquest, Walter W., and William Kilpatrick. DYNAMICS OF POCKET GOPHER DISTRIBUTION ON THE EDWARDS PLATEAU OF TEXAS. *Southwest. Nat.* 18(1): 1-9, 1 fig. 30 Mar. 1973. *WR 149: 28*
[Midwestern Univ., Wichita Falls, Tex.] Abstract: Two species of pocket gophers are allopatric on the Edwards Plateau of central Texas but remains of both species have been found together in late Pleistocene and early recent cave faunas. *Geomys bursarius texensis* occupies a small range in Mason and McCulloch, and perhaps Gillespie, Counties. *Thomomys bottae confinalis* is found in a small area in Kimble County and a broader, separated area in Edwards and Sutton counties. *Thomomys b. confinalis* no longer occurs at the type locality in Kerr County. No geographic variation was found in *Thomomys* populations from the eastern Edwards Plateau, and isolation of the populations may have been relatively recent. Populations of *Thomomys* seem to be expanding at this time. The present small range of *Geomys b. texensis* may be only a remnant of its late Pleistocene range.

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[Mich. State Univ., East Lansing.] Abstract: Forty-seven surface nests of the hispid cotton rat were observed in a grassy area bordering an airstrip on the Osa Peninsula, Costa Rica. Average nest dimensions were determined. Interior nest temperatures were significantly cooler than shade temperatures. Moderate precipitation was effectively excluded from nest interiors. Nests and nest entrances were oriented to the SE and NW sides of grass clumps.

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[Boccino, 1-37010 Brenzone, Italy.] *"Lemmus lemmus."*

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[Univ. Wash., Seattle.] One hundred twenty-one *Peromyscus maniculatus gambelii* were used in conducting 203 homing trials from 30 different release points that ranged from 64 to 1976 meters from the trapping site. The habitat was open sagebrush and basalt cliffs; lakes and creeks enhanced the complexity and distinctiveness of the landscape. Homing performance decreased with increase in distance and was poor, even from short distances, across a large irrigation canal that served as an ecological barrier. Although males were better "homers" on the average, females were better for the longest distances, and no males returned from across the canal.--From abstr.

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[East African Freshwater Fisheries Organization, P.O. Box 343, Jinja, Uganda.] The activity of *Peromyscus maniculatus* in an Ontario forest and *Peromyscus truei* and *Peromyscus californicus* in California chaparral was observed directly and monitored electronically. The activity of all three species outside the burrow was pulsed through the night, with different individuals not in tight synchrony and a depression in overall activity in the middle of the night. Activity of *P. californicus* was similar to that of *P. truei*, but *P. californicus* had in addition a pronounced burst of activity before dawn. As summer progressed, the amount of activity of *P. maniculatus* diminished and was compressed into the early part of the night. Wind and moonlight had no strong effect upon activity within a night.--From abstr.

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BIG GAME, GENERAL

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calculated and plotted against the date the photographs were taken. Regression lines, as well as the 95% confidence intervals, were calculated from the photographs and plotted. These regression lines fell into four distinct groups, representing Age Classes II through V. The average degree of error in the tusk-length:snout-width ratio was 3.01 units, a figure well within the above 95% confidence intervals.

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Contains 19 papers as follows: *Report of the first North American Wild Sheep Conference*, Warren Kelly; *Census of desert bighorn sheep with time-lapse photography*, Jack B. Helvie; *1971 wild horse and burro act*, Roscoe E. Ferris; *Inter-species embryo transfer in the propagation of rare species of wild sheep*, Thomas D. Bunch, Warren C. Foote, and J. Juan Spillett; *Winter food habits of California bighorn sheep in the Sierra Nevada*, David J. Dunaway; *The status of desert bighorn sheep on the Papago Indian Reservation*, David E. Brown; *Habitat of the Mexican bighorn sheep in the Big Hatchet Mountains of New Mexico*, Robert D. Jacobsen and Lanny O. Wilson; *The Arizona Desert Bighorn Sheep Society, Inc.*, Robert D. Carson; *Conclusion of the bighorn investigation in California*, Richard A. Weaver; *Nevada's Desert Bighorn Sheep Status Report 1971*, Jack R. Cooper; *Disease losses in desert bighorn sheep Black Gap Area*, Tommy L. Hailey, R. G. Marburger, R. M. Robinson, and Keith A. Clark; *Progress report -- lava beds bighorn re-establishment*, James A. Blaisdell; *A cooperative effort with the Arizona Game and Fish Department*, Daniel P. Schadle; *Development of permanent wildlife water supplies Joshua Tree National Monument*, Peter L. Parry; *Capture of free-ranging desert sheep in Sonora, Mexico*, Gerald H. Gates; *Fraternity of the desert bighorn--Nevada*, Carl Ciliax; *Status of desert bighorn sheep in Arizona*, Paul M. Webb; *Man's invasion into the bighorn's habitat*, James R. DeForge; and *Observations taken during the birth of Candy's 1972 lamb*, George M. Constantino.

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[Parasitol. Inst. Czechoslovak Acad. Sci., Prague, Czechoslovakia.] *"Cervus elaphus* and *C. nippon."*

Eltringham, S. K. A TEST OF THE COUNTING OF ELEPHANTS FROM THE AIR. *E. Afr. Wildl. J.* 10(4): 299-306, 4 figs. Dec. 1972. *WR 149: 46*
[Uganda Inst. Ecol., P.O. Box 22, Lake Katwe, Uganda.] Summary: Aerial counts of elephants made three times a day over the same region tended to be consistent if due allowance is made for observed movements to and from the area. There was little difference between observers when two were present. Ground counts made on the same day as the aerial counts tended to return lower totals, due probably to elephants in dense vegetation being hidden from the ground observer but visible from the air. It is concluded that aerial survey is the most efficient way of counting elephants, at least in the Queen Elizabeth National Park.

Field, C. R. THE FOOD HABITS OF WILD UNGULATES IN UGANDA BY ANALYSES OF STOMACH CONTENTS. *E. Afr. Wildl. J.* 10(1): 17-42, 3 figs. May 1972. *WR 149: 46*
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Foster, J. B., and A. I. Dagg. NOTES ON THE BIOLOGY OF THE GIRAFFE. *E. Afr. Wildl. J.* 10(1): 1-16, 4 figs. May 1972. *WR 149: 46*
[Provincial Mus., Victoria, British Columbia, Canada.] Summary: During a 3-year study in Nairobi National Park, 1965-1968, 250 giraffe were identified by their neck markings. The herd structure of these animals was studied, including the relationships between particular individuals. Population information collected included the times of calving, the growth and longevity of giraffe, their reproductive potential, the age structure of the population and its density. Immigration, emigration and home range studies were completed with the help of radio telemetry equipment. The effect of giraffe on the vegetation and the possibility of giraffe surviving without free water are discussed.

Grimsdell, J. J. R., and R. H. V. Bell. POPULATION GROWTH OF RED LECHWE, *KOBUS LECHE LECHE* GRAY, IN THE BUSANGA PLAIN, ZAMBIA. *E. Afr. Wildl. J.* 10(2): 117-122, 2 figs. Oct. 1972. *WR 149: 46*
[Natl. Council Sci. Res., P.O. Box 49, Chilanga, Zambia.] Summary: An isolated population of red lechwe living in the Busanga Plain, Zambia, has been protected from human hunting since 1948. Probably as a result the population has increased, as indicated by reliable census data. From 1956 to 1972 this increase has very closely fitted an exponential rate; the calculated value of the infinitesimal rate of population increase *(r)* is 0.131, and the finite rate of increase is 14.0% per year. This exponential phase is considered to represent a segment of a logistic curve.

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[N.Y. State Univ. Coll., Brockport.] *"Alces alces gigas."*

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[Soil Conserv. Serv., Lincoln, Nebr.]

Hartwig, H. "FEGEVERHALTEN" BEI EINEM GEHOERNLOSEN REHBOCK. [RUBBING BEHAVIOR IN AN ANTLERLESS STAG.] *Z. Jagdwiss.* 18(3): 166-168, illus. 1972. [From Biol. Abstr. 55(9), 1973. In German.] *WR 149: 46*

Henshaw, John. NOTES ON CONFLICT BETWEEN ELEPHANTS AND SOME BOVIDS AND ON OTHER INTER-SPECIFIC CONTACTS IN YANKARI GAME RESERVE, N.E. NIGERIA. *E. Afr. Wildl. J.* 10(2): 151-153. Oct. 1972. *WR 149: 47*
[Box 593, College, Alaska.]

Herbert, Harry John. THE POPULATION DYNAMICS OF THE WATERBUCK *KOBUS ELLIPSIPRYMNUS* (OGILBY, 1833) IN THE SABI-SAND WILDTUIN. *Mammal. Depicta* 1972: 5-68. 1972. [From J. Mammal. 53(4, suppl.), 1972. In (English) with German summ.] *WR 149: 47*

Hitchins, P. M., M. E. Keep, and K. Rochat. THE CAPTURE OF BLACK RHINOCEROS IN HLUHLUWE GAME RESERVE AND THEIR TRANSLOCATION TO THE KRUGER NATIONAL PARK. *Lammergeyer* no. 17. p. 18-30, 3 figs. Dec. 1972. *WR 149: 47*
[Hluhluwe Game Reserve, P.O. Box 25, Mtubatuba, Natal.] *"Diceros bicornis."*

Hoff, Gerald L., and Daniel O. Trainer. EXPERIMENTAL INFECTION IN NORTH AMERICAN ELK WITH EPIZOOTIC HEMORRHAGIC DISEASE VIRUS. *J. Wildl. Dis.* 9(2): 129-132. Apr. 1973. *WR 149: 47*
[Fla. Div. Health, P.O. 210, Jacksonville.] *"Cervus canadensis."*

Hofmeyr, J. M., and J. R. de Bruine. THE PROBLEMS ASSOCIATED WITH THE CAPTURE, TRANSLOCATION AND KEEPING OF WILD UNGULATES IN SOUTH WEST AFRICA. *Lammergeyer* no. 18. p. 21-29, 2 figs. Mar. 1973. *WR 149: 47*
[Nature Conserv. & Tourism Div., Private Bag 13186, Windhoek, South West Africa.] *"Diceros bicornis, Hippotragus equinus* and *Aepyceros petersi."*

Holsworth, W. N. REEDBUCK CONCENTRATIONS IN DINDER NATIONAL PARK, SUDAN. *E. Afr. Wildl. J.* 10(4): 307-308. Dec. 1972. *WR 149: 47*
[Univ. Western Ontario, London, Ontario, Canada.] Gregarious behavior of Dinder populations of *Redunca redunca bohor* contrasts with current descriptions. "The Dinder herd is also unique in that they represent a very dense population on the very edge of their distributional range."

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[Tohoku Univ., Asamushi, Aomori City, Japan.]

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[Div. Nat. Conserv. & Tourism, Windhoek, South West Africa.] *"Kobus leche."*

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[Div. Nat. Conserv. & Tourism, Windhoek, South West Africa.]

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[Div. Nat. Conserv. & Tourism, Windhoek, South West Africa.]

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Keep, M. E. THE MEAT YIELD, PARASITES AND PATHOLOGY OF ELAND IN NATAL. *Lammergeyer* no. 17. p. 1-9. Dec. 1972. *WR 149: 48*
[Hluhluwe Game Reserve, P.O. Box 25, Mtubatuba, Natal, South Africa.] *"Taurotragus oryx."*

Keep, M. E. THE USE OF "ROMPUN" (VA 1470) BAYER ON THE WHITE RHINOCEROS. *Lammergeyer* no. 17. p. 31-35. Dec. 1972. *WR 149: 48*
[Hluhluwe Game Reserve, P.O. Box 25, Mtubatuba, Natal, South Africa.] *"Ceratotherium simum."*

Keep, M. E. THE IMMOBILIZATION AND TRANSLOCATION OF BLACK WILDEBEEST. *Lammergeyer* no. 18. p. 39-43, 1 fig. Mar. 1973. *WR 149: 48*
[Hluhluwe Game Reserve, P.O. Box 25, Mtubatuba, Natal, South Africa.]
Summary: A method of immobilising black wildebeest *(Connochaetis gnou)* in an area lacking natural cover and making close approach impossible is reported. The animals were enticed into a small paddock by artificial feeding and then darted from the cover of hides. Immobilisation was achieved with 1 mg Etorphine hydrochloride and 40 mg Azaperone. Two antagonists were used, viz Cyprenorphine hydrochloride or Nalorphine hydrobromide. Large communal crates proved more suitable than small single crates for transportation.

Keep, M. E. THE PROBLEMS ASSOCIATED WITH THE CAPTURE AND TRANSLOCATION OF THE BLACK RHINOCEROS IN ZULULAND, REPUBLIC OF SOUTH AFRICA. *Lammergeyer* no. 18. p. 15-20, 1 fig. Mar. 1973. *WR 149: 48*
[Hluhluwe Game Reserve, P.O. Box 25, Mtubatuba, Natal, South Africa.] *"Diceros bicornis."*

Keep, M. E., P. R. Barnes, and A. E. A. Root. THE MARKING OF ADULT MALE ELAND TO STUDY SEASONAL MOVEMENTS. *Lammergeyer* no. 17. p. 10-17, 3 figs. Dec. 1972. *WR 149: 48*
[Hluhluwe Game Reserve, P.O. Box 25, Mtubatuba, Natal, South Africa.]
Summary: A method of marking adult male eland [*Taurotragus oryx*] in two of the lower valleys of the Natal Drakensberg, using collars and ear streamers is described. The results obtained from the two forms of marking, and the seasonal movements of the animals following marking, are given and discussed.

Kitchen, David Wayne. THE SOCIAL BEHAVIOR AND ECOLOGY OF THE PRONGHORN. *Ph.D. thesis, Univ. Mich.* 323 p. 1972. [From Diss. Abstr. Int. B Sci. Eng. 33 (11), 1973.] *WR 149: 48*
"Antilocapra americana."

Knight, Robert A., and Leslie S. Uhazy. REDESCRIPTION OF *TRICHURIS (= TRICHOCEPHALUS) SCHUMAKOVITSCHI* (SAVINKOVA, 1967) FROM CANADIAN ROCKY MOUNTAIN BIGHORN SHEEP *(OVIS CANADENSIS CANADENSIS)*. *J. Parasitol.* 59(1): 136-140, 10 figs. Feb. 1973. *WR 149: 48*
[Agric. Res. Cent., Beltsville, Md.]

Leuthold, Barbara M., and Walter Leuthold. FOOD HABITS OF GIRAFFE IN TSAVO NATIONAL PARK, KENYA. *E. Afr. Wildl. J.* 10(2): 129-141, 1 fig. Oct. 1972. *WR 149: 49*
[Tsavo Res. Project, P.O. Box 14, Voi, Kenya.] A total of sixty-six plant species was found to be eaten, the great majority being trees and shrubs, with a few creepers and vines. There were marked seasonal differences in the diet of giraffe, deciduous trees, shrubs and vines being dominant in the green season, evergreen plants (partly in riverine forest) in the dry season.--From summ.

Leuthold, Walter. GESTATION PERIOD IN THOMSON'S GAZELLE. *E. Afr. Wildl. J.* 10(4): 309-310. Dec. 1972. *WR 149: 49*
[Tsavo Res. Project, P.O. Box 14, Voi, Kenya.]

Lincoln, G. A. THE ROLE OF ANTLERS IN THE BEHAVIOUR OF RED DEER. *J. Exp. Zool.* 182(2): 233-250. 1972. [From Biol. Abstr. 55(7), 1973.] *WR 149: 49*
[Univ. Liverpool, Liverpool, England.]

Lowe, V. P. W. VARIATION IN MANDIBLE LENGTH AND BODY WEIGHT OF RED DEER *(CERVUS ELAPHUS)*. *J. Zool.* (London) 166(3): 303-311. Mar. 1972. [From J. Mammal. 53(4, suppl.), 1972.] *WR 149: 49*

Lumia, Augustus R. THE RELATIONSHIP BETWEEN DOMINANCE AND PLAY BEHAVIOUR IN THE AMERICAN BUFFALO, *BISON BISON*. *Z. Tierpsychol.* 30(4): 416-419. 1972. [From Biol. Abstr. 55(3), 1973. In English with German summ.] *WR 149: 49*
[Skidmore Coll., Saratoga Springs, N.Y.]

McEwan, E. H., and P. E. Whitehead. REPRODUCTION IN FEMALE REINDEER AND CARIBOU. *Canadian J. Zool.* 50(1): 43-46. 1972. [From J. Mammal. 53(4, suppl.), 1972.] *WR 149: 49*

Meyer, Peter. ZUR BIOLOGIE UND OEKOLOGIE DES ATLASHIRSCHES *CERVUS ELAPHUS BARBARUS*, BENNETT 1833. [ON BIOLOGY AND ECOLOGY OF NORTH AFRICAN RED DEER *CERVUS ELAPHUS BARBARUS*, BENNETT 1833.] *Z. Saeugetierkd.* 37(2): 101-116, illus. 1972. [From Biol. Abstr. 55(1), 1973. In German with English summ.] *WR 149: 49*
[Tieraerztl. Hochsch., Bischofsholer Damm 15, Hannover, Germany.]

Miller, Frank L., Charles J. Jonkel, and Gaston D. Tessier. GROUP COHESION AND LEADERSHIP RESPONSE BY BARREN-GROUND CARIBOU TO MAN-MADE BARRIERS. *Arct. J. Arct. Inst. North Am.* 25(3): 193-202, illus. 1972. [From Biol. Abstr. 55(7), 1973. In English with French and Russian summ.] *WR 149: 49*
[Canadian Wildl. Serv., Ottawa, Ontario, Canada.]

Mohan, R. N., and M. G. Gotts. DISEASES AND PARASITES OF THE AFRICAN BUFFALO *(SYNCERUS CAFFER)*. *Vet. Bull.* (Tanzania) 40(3): 157-165. 1970. [From J. Mammal. 53(4, suppl.), 1972.] *WR 149: 49*

Myrberget, Svein. ELGEN I NORD-NORGE OMKRING 1970. [THE MOOSE, *ALCES ALCES*, IN NORTH NORWAY AROUND 1970.] *Fauna* (Oslo) 25(2): 84-96, illus. 1972. [From Biol. Abstr. 55(8), 1973. In Norwegian with English summ.] *WR 149: 49*
[Statens Viltundersokelser, Norway.]

Parker, G. R. THE RESEARCH AND MANAGEMENT OF BARREN-GROUND CARIBOU IN NORTHERN CANADA. *Canadian Geogr. J.* 84(6): 200-207. June 1972. [From J. Mammal. 53(4, suppl.), 1972.] *WR 149: 49*

Parker, Gerald R. DISTRIBUTION AND DENSITIES OF WOLVES WITHIN BARREN-GROUND CARIBOU RANGE IN NORTHERN MAINLAND CANADA. *J. Mammal.* 54(2): 341-348, 5 figs. May 1973. *WR 149: 49*
[Canadian Wildl. Serv., 2721 Highway 31, Ottawa, Ontario, Canada.] *"Canis lupus."*

Pav, J., and D. Zajicek. EPIZOOTOLOGIE DER HELMINTHEN *ASCAROPS STRONGYLINA* (RUD.) UND *PHYSOCEPHALUS SEXALATUS* (MOLIN) BEI GATTER-SCHWARZWILD *(SUS SCROFA L.)*. [EPIZOOTOLOGY OF THE HELMINTHS *ASCAROPS STRONGYLINA* (RUD.) AND *PHYSOCEPHALUS SEXALATUS* (MOLIN) IN WILD BOAR *(SUS SCROFA L.)* LIVING IN ENCLOSURES.] *Z. Jagdwiss.* 18(1): 6-15, illus. 1972. [From Biol. Abstr. 55(2), 1973. In German with French and English summ.] *WR 149: 50*

Petersen, J. C. Briand. AN IDENTIFICATION SYSTEM FOR ZEBRA *(EQUUS BURCHELLI, GRAY)*. *E. Afr. Wildl. J.* 10(1): 59-63, 5 figs. May 1972. *WR 149: 50*
[P.O. Box 30559, Nairobi, Kenya.] Summary: An identification system based on the individual stripe patterns, has been developed for zebra *(Equus burchelli, Gray)*. A taxonomic nomenclature facilitates easy field classification into a number of classes, which form the basis for a photo-filing system, and thus quick identification of individual animals.

Pine, Donald S., and Gene L. Gerdes. WILD PIGS IN MONTEREY COUNTY, CALIFORNIA. *Calif. Fish Game* 59(2): 126-137, 1 fig. Apr. 1973. *WR 149: 50*
Information on the status of wild pigs *(Sus scrofa)* in Monterey County was collected from 1964 through 1968. A total of 138 pigs was trapped, tagged and released on Hunter Liggett Military Reservation, in Carmel Valley, and Big Sur State Park. Of the tagged pigs, 53 were retrapped, and the average distance traveled was 0.2 mile. Tags from 29 hunter-killed pigs were returned. The average distance from the release site was 2.6 miles. After the 1966-67 hunting season, a poor forage production year, the estimated county-wide population was 1,622 (1.3 pigs per square mile). After the 1967-68 season, an excellent forage production year, the estimated pig population was 2,600 (2.1 pigs per square mile).--From abstr.

Prisyazhnyuk, V. E., and N. P. Prisyazhnyuk. [INSULAR POPULATION OF *CERVUS NIPPON* T. IN THE SOUTHERN PART OF THE FAR EAST.] *Byull. Mosk. O-va. Ispyt. Prir. Otd. Biol.* 77(2): 32-41, illus. 1972. [From Biol. Abstr. 54(11), 1972. In Russian with English summ.] *WR 149: 50*

Root, Alan. FRINGE-EARED ORYX DIGGING FOR TUBERS IN THE TSAVO NATIONAL PARK (EAST). *E. Afr. Wildl. J.* 10(2): 155-157, 2 figs. Oct. 1972. *WR 149: 50*
[P.O. Box 43747, Nairobi, Kenya.] *"Oryx beisa callotis."*

Saito, Yutaka, and Harry Hoogstraal. *HAEMAPHYSALIS (KAISERIANA) MAGESHIMAENSIS* SP. N. (IXODOIDEA: IXODIDAE), A JAPANESE DEER PARASITE WITH BISEXUAL AND PARTHENOGENETIC REPRODUCTION. *J. Parasitol.* 59(3): 569-578, 35 figs. June 1973. *WR 149: 50*
[Niigata Univ. School Med., Niigata City, Japan.]

Scotter, George W. REINDEER RANCHING IN CANADA. *J. Range Manage.* 25(3): 167-174, illus. 1972. [From Biol. Abstr. 55(10), 1973.] *WR 149: 50*
[Canadian Wildl. Serv., Edmonton, Alberta, Canada.]

Shackleton, D. M., and D. A. Hutton. AN ANALYSIS OF THE MECHANISMS OF GROOMING OF MOUNTAIN SHEEP HORNS. *Z. Saeugetierk.* 36(6): 342-350. Dec. 1971. [From J. Mammal. 53(4, suppl.), 1972. In English with German summ.] *WR 149: 50*

Shank, Chris C. SOME ASPECTS OF SOCIAL BEHAVIOR IN A POPULATION OF FERAL GOATS *(CAPRA HIRCUS L.)*. *Z. Tierpsychol.* 30(5): 488-528, illus. 1972. [From Biol. Abstr. 55(9), 1973. In English with German summ.] *WR 149: 50*
[Univ. Calgary, Calgary, Alberta, Canada.]

Sinclair, A. R. E., and P. Duncan. INDICES OF CONDITION IN TROPICAL RUMINANTS. *E. Afr. Wildl. J.* 10(2): 143-149, 3 figs. Oct. 1972. *WR 149: 50*
[Serengeti Res. Inst., Box 3134, Arusha, Tanzania.] Bone marrow dry weight expressed as a percentage of its fresh weight was found to be a good indication of its fat content in wildebeest, kongoni, and buffalo. The calculated regression equations were similar enough to suggest a more general formula for the larger ruminants.--From summ.

Sinclair, A. R. E., and M. D. Gwynne. FOOD SELECTION AND COMPETITION IN THE EAST AFRICAN BUFFALO *(SYNCERUS CAFFER* SPARRMAN). *E. Afr. Wildl. J.* 10(2): 77-89, 2 figs. Oct. 1972. *WR 149: 51*
[Serengeti Res. Inst., P.O. Box 3134, Arusha, Tanzania.]

Skinner, J. D., and B. J. Huntley. A REPORT ON THE SEXUAL CYCLE IN THE KUDU BULL *TRAGELAPHUS STREPSICEROS* PALLAS AND A DESCRIPTION OF AN INTER-SEX. *Zool. Afr.* 6(2): 293-299, illus. 1971. [From Biol. Abstr. 55(9), 1973.] *WR 149: 51*
[Univ. Pretoria, Pretoria, South Africa.]

Skinner, J. D., J. A. H. Van Deerden, and J. H. M. Van Zyl. A PRELIMINARY NOTE ON THE EFFECT OF SEASON ON THE REPRODUCTIVE TRACT OF THE ELAND BULL *TAURO-TRAGUS ORYX. South African J. Anim. Sci.* 1(1): 81-83, illus. 1971. [From Biol. Abstr. 55(9), 1973.] *WR 149: 51*
[Univ. Pretoria, Pretoria, South Africa.]

Spinage, C. A. AGE ESTIMATION OF ZEBRA. *E. Afr. Wildl. J.* 10(4): 273-277, 2 figs. Dec. 1972. *WR 149: 51*
[Coll. African Wildl. Manage., P.O. Box 3031, Moshi, Tanzania.] Summary: A method of zebra age determination, using the decreasing height of M1 in a wear model, was compared with the method of visual assessment of incisor changes as used by Klingel & Klingel (1966). Good agreement between the methods was found.

Spinage, C. A., Fiona Guinness, S. K. Eltringham, and M. H. Woodford. ESTIMATION OF LARGE MAMMAL NUMBERS IN THE AKAGERA NATIONAL PARK AND MUTARA HUNTING RESERVE, RWANDA. *Terre Vie* 26(4): 561-570, 2 figs. Oct.-Dec. 1972. In English with French summ. *WR 149: 51*
[Coll. African Wildl. Manage., P.O. Box 3031, Moshi, Tanzania.] Summary: Two methods were used to estimate large mammal numbers in the 250,000 ha Akagera National Park, and the 61,200 ha Mutara Hunting Reserve, Rwanda. Six monthly ground counts were made by Landrover, of twelve randomly chosen quadrats covering 3.8% of the total area; and two total air counts. The methods gave differing results, the ground estimates being up to about six times greater. This may have been attributable to contagious distribution of some of the species counted, and the small sampling fraction.

Tashkinov, N. I. [WARBLE FLIES OF REINDEER IN THE AMUR DISTRICT. II. DEVELOPMENT OF WARBLE FLY LARVAE AND DYNAMICS OF ATTACKING REINDEER BY ADULTS.] *Parasitologiya* 6(4): 326-333. 1972. [From Biol. Abstr. 55(9), 1973. In Russian with English summ.] *WR 149: 51*
[Far East Res. Inst. Vet., Blagoveshchensk, USSR.]

Thornton, Jack E., T. J. Galvin, R. R. Bell, and C. W. Ramsey. PARASITES OF THE BLACKBUCK ANTELOPE *(ANTILOPE CERVICAPRA)* IN TEXAS. *J. Wildl. Dis.* 9(2): 160-162. Apr. 1973. *WR 149: 51*
[Tex. A&M Univ., College Station.]

Uhazy, Leslie S., Jerome L. Mahrt, and John C. Holmes. COCCIDIA OF ROCKY MOUNTAIN BIGHORN SHEEP IN WESTERN CANADA. *Canadian J. Zool.* 49(11): 1461-1464. 1971. [From Biol. Abstr. 55(4), 1973. In English with French summ.] *WR 149: 51*
[Cornell Univ., Ithaca, N.Y.] *"Ovis c. canadensis."*

Weisser, Christian F., and Ke Chung Kim. REDISCOVERY OF *SOLENOPOTES TARANDI* (MJÖBERG, 1915) (LINOGNATHIDAE: ANOPLURA), WITH ECTOPARASITES OF THE BARREN GROUND CARIBOU. *Parasitology* 66(1): 123-132, 21 figs. Feb. 1973. *WR 149: 51*
[Univ. Heidelberg, Heidelberg, Germany.] Summary: The adults of *Solenopotes tarandi* (Mjöberg, 1915) are redescribed and illustrated, and its allied species of *Solenopotes* are compared. The nymphs of this species are for the first time described and illustrated. Ectoparasite infestation of the barren ground caribou *(Rangifer tarandus granti* Allen) is also discussed.

Western, David, and Daniel M. Sindiyo. THE STATUS OF THE AMBOSELI RHINO POPULATION. *E. Afr. Wildl. J.* 10(1): 43-57, 2 figs. May 1972. *WR 149: 52*
[Univ. Nairobi, P.O. Box 30197, Nairobi, Kenya.] The status of the Amboseli rhino population has given rise to particular concern, due to an apparently rapid decline since the 1950s. It is concluded that the rhino population is unable to effectively alter the magnitude of decline through intrinsic factors, or immigration. It would take a population over twice its present size to offset the impact of spearing. The effect of a rapidly changing environment is considered, but although it may result in slightly less favorable conditions for the rhinos, any decline is completely masked by spearing. The reasons for spearing and the recent increases are discussed, as well as the future prospects and implications. --From summ.

DEER (Odocoileus)

Applegate, James. DEER AND THE PEOPLE OF NEW JERSEY. *N.J. Outdoors* 23(8-9): 3-9, illus. Feb.-Mar. 1973. *WR 149: 52*
[Rutgers Univ., New Brunswick, N.J.] Popular account of the results of a questionnaire "on people and their attitudes toward and desires for wildlife in New Jersey."

Curtis, Robert L., Jr. CLIMATIC FACTORS INFLUENCING HUNTER SIGHTINGS OF DEER ON THE BROAD RUN RESEARCH AREA. *M.S. thesis, Va. Polytech. Inst.* 107 p. 1971. *WR 149: 52*
Courtesy/ Burd S. McGinnes.

Foreyt, W. J., and A. C. Todd. ACTION OF OXYCLOZANIDE AGAINST ADULT *FASCIOLOIDES MAGNA* (BASSI, 1875) INFECTIONS IN WHITE-TAILED DEER. *J. Parasitol.* 59(1): 208-209. Feb. 1973. *WR 149: 52*
[Univ. Wis., Madison.] *"Odocoileus virginianus."*

Gilbert, Frederick F. *PARELAPHOSTRONGYLUS TENUIS* (DOUGHERTY) IN MAINE: I--THE PARASITE IN WHITE-TAILED DEER *(ODOCOILEUS VIRGINIANUS, ZIMMERMAN). J. Wildl. Dis.* 9(2): 136-143, 1 fig. Apr. 1973. *WR 149: 52*
[Univ. Guelph, Guelph, Ontario, Canada.]

Harlow, Richard F. FOODS OF WHITE-TAILED DEER IN THE SOUTHEAST BASED ON RUMEN ANALYSIS. *M.S. thesis, Va. Polytech. Inst.* 72 p. 1971. *WR 149: 52*
Courtesy/ Burd S. McGinnes.

Harris, Mary J., Titus H. J. Huisman, and Frank A. Hayes. GEOGRAPHIC DISTRIBUTION OF HEMOGLOBIN VARIANTS IN THE WHITE-TAILED DEER. *J. Mammal.* 54(1): 270-274, 2 figs. Feb. 1973. *WR 149: 52*
[Med. Coll. Ga., Augusta.] *"Odocoileus virginianus."*

Issel, Charles J. ISOLATION OF JAMESTOWN CANYON VIRUS (A CALIFORNIA GROUP ARBOVIRUS) FROM A WHITE-TAILED DEER. *Am. J. Trop. Med. Hyg.* 22(3): 414-417. May 1973. *WR 149: 52*
[Univ. Wis., Madison.] Abstract: Three white-tailed deer were placed in an enclosure in central Wisconsin as sentinels for Jamestown Canyon (JC) virus in 1971. A strain of JC virus was isolated in low titer from the blood of one deer in May, and by mid-June, 2 of the 3 deer had developed antibodies specifically neutralizing JC virus. This is the first reported isolate of JC virus from a vertebrate. It was concluded that white-tailed deer may be important vertebrate hosts for JC virus.

Lenker, D. K. A STUDY OF SPERMATOZOAN RESERVES OF MALE WHITE-TAILED DEER AND OF THE REPRODUCTIVE PHYSIOLOGY OF FAWNS. *M.S. thesis, Va. Polytech. Inst.* 58 p. 1973. *WR 149: 52*
Courtesy/ Burd S. McGinnes.

Leposky, George. A BATTLE WON...COMEBACK OF THE KEY DEER. *Fla. Wildl.* 26 (9): 12-14. Feb. 1973. *WR 149: 53*
Key deer have increased from less than 50 individuals in 1947 to approximately 750 in 1973. In the 1940's they ranged on 5 islands--in the 1970's they range on 18 islands.

Liscinsky, Stephen A., Charles T. Cushwa, Michael J. Puglisi, and Michael A. Ondik. WHAT DO DEER EAT? *Pa. Game News* 44(5): 13-18, 8 figs. May 1973. *WR 149: 53*
[Pa. Game Commission, Harrisburg.] "In summary, it can be said that deer utilize many kinds of food, their choices being strongly governed by the succulence and palatability of whatever is available at a given time. It follows that habitat management for deer should be geared to making food available when and where deer need it most, in the most economical fashion."

Müller-Schwarze, Dietland. SOCIAL SIGNIFICANCE OF FOREHEAD RUBBING IN BLACKTAILED DEER *(ODOCOILEUS HEMIONUS COLUMBIANUS)*. *Anim. Behav.* 20(4): 788-797, 8 figs. Nov. 1972. *WR 149: 53*
[Utah State Univ., Logan.] Abstract: Male and female blacktailed deer rub their foreheads on twigs and branches of trees and bushes. This rubbing behaviour was studied in captive animals. Males rubbed more often than females; and in males the rubbing frequency increased in autumn. Females sniffed most often in autumn. There are exclusive and shared rubbing sites. Subordinate individuals rubbed less often, but sniffed more often, particularly at shared rubbing sites.

Poux, R., Jr. DEER BEHAVIOR AS IT EFFECTS SEX AND AGE RATIO COUNTS. *M.S. thesis, Va. Polytech. Inst.* 42 p. 1972. *WR 149: 53*
Courtesy/ Burd S. McGinnes.

Rayburn, E. B. A MEASURE OF THE NATURAL POTENTIAL OF LAND FOR SUPPORTING DEER POPULATIONS. *M.S. thesis, Va. Polytech. Inst.* 195 p. 1972. *WR 149: 53*
Courtesy/ Burd S. McGinnes.

Ruggiero, L. F. COMPARISON OF *IN VITRO* AND *IN VIVO* DRY MATTER DIGESTIBILITY IN THE WHITE-TAILED DEER. II. CHROMIC OXIDE AS AN INDICATOR OF FECAL OUTPUT. *M.S. thesis, Va. Polytech. Inst.* 41 p. 1972. *WR 149: 53*
Courtesy/ Burd S. McGinnes.

Sanders, Oscar T. SULPHUR CONTENT OF DEER HAIR. *M.S. thesis, Va. Polytech. Inst.* 43 p. 1971. *WR 149: 53*
Courtesy/ Burd S. McGinnes.

Sotala, Dennis J., and Charles M. Kirkpatrick. FOODS OF WHITE-TAILED DEER, *ODOCOILEUS VIRGINIANUS*, IN MARTIN COUNTY, INDIANA. *Am. Midl. Nat.* 89(2): 281-286. Apr. 1973. *WR 149: 53*
[Delaware Location, Mohawk, Mich.] Abstract: Rumen contents of 132 white-tailed deer *(Odocoileus virginianus)* from southern Indiana were analyzed and tabulated by seasons to show frequency of occurrence and percentage of total volume. Overall, the seven most important taxa were grass (late winter), Japanese honeysuckle, acorns, English plantain, persimmon, poison ivy and Virginia creeper. Only 19 taxa were eaten in sufficient amounts for each to comprise more than 1.0% of the yearly volume. Most of the diet consisted of commercially unimportant species. About 3.0% of the winter diet was leafless twigs.

Stone, Ward B. ANOTHER CASE OF DERMATOPHILOSIS IN WHITE-TAILED DEER. *N.Y. Fish Game J.* 19(2): 184. July 1972. *WR 149: 53*

Thomas, D. C., and I. D. Smith. REPRODUCTION IN A WILD BLACK-TAILED DEER FAWN. *J. Mammal.* 54(1): 302-303. Feb. 1973. *WR 149: 53*
[Canadian Wildl. Serv., 2721 Highway 31, Ottawa, Ontario, Canada.] *"Odocoileus hemionus columbianus."*

DEER (Odocoileus)--Continued

Todd, Rodgers W. THE DEER RESEARCH PROJECT / CURRENT ACTIVITIES AND FUTURE NEEDS. *N.J. Outdoors* 23(5): 3-11, illus. Nov. 1972. *WR 149: 54*
Popular account of New Jersey deer research.

White, Marshall. DESCRIPTION OF REMAINS OF DEER FAWNS KILLED BY COYOTES. *J. Mammal.* 54(1): 291-293, 1 fig. Feb. 1973. *WR 149: 54*
[Univ. Calif., Berkeley.] *"Odocoileus virginianus."*

MAMMALS--MARINE

Amundin, Birgitta, and Mats Amundin. [SOME ETHOLOGICAL OBSERVATIONS ON THE HARBOUR PORPOISE *(PHOCOENA PHOCOENA)* IN CAPTIVITY.] *Zool. Revy* 33(3-4): 51-59. 1971. [From J. Mammal. 53(4, suppl.), 1972. In Danish with English summ.] *WR 149: 54*

Aquayo L., Anelio. THE PRESENT STATUS OF THE JUAN FERNÁNDEZ FUR SEAL. *K. Nor. Vidensk. Selsk.* 1: 1-14. 1971. [From J. Mammal. 53(4, suppl.), 1972.] *WR 149: 54*

Arnold, P. W. PREDATION ON HARBOUR PORPOISE, *PHOCOENA PHOCOENA*, BY A WHITE SHARK, *CARCHARODON CARCHARIAS*. *J. Fish. Res. Board Canada* 29(8): 1213-1214. 1972. [From Biol. Abstr. 55(6), 1973. In English with French summ.] *WR 149: 54*
[Univ. Guelph, Guelph, Ontario, Canada.]

Beach, Frank A., and Louis M. Herman. PRELIMINARY STUDIES OF AUDITORY PROBLEM SOLVING AND INTERTASK TRANSFER BY THE BOTTLENOSE DOLPHIN. *Psychol. Rec.* 22(1): 49-62, illus. 1972. [From Biol. Abstr. 55(3), 1973.] *WR 149: 54*
[Naval Undersea Res., Box 997, Kailua, Oahu, Hawaii.]

Benjaminsen, Terje. ON THE BIOLOGY OF THE BOTTLENOSE WHALE, *HYPEROODON AMPULLATUS* (FORSTER). *Norw. J. Zool.* 20(3): 233-241, illus. 1972. [From Biol. Abstr. 55(8), 1973.] *WR 149: 54*
[Inst. Mar. Res., P.B. 5011, Bergen-Nordnes, Norway.]

Best, Peter B. STALKED BARNACLES *CONCHODERMA AURITUM* ON A ELEPHANT SEAL: OCCURRENCE OF ELEPHANT SEALS ON SOUTH AFRICAN COAST. *Zool. Afr.* 6(2): 181-185, illus. 1971. [From Biol. Abstr. 55(7), 1973.] *WR 149: 54*
[Div. Sea Fish., Cape Town, South Africa.] *"Mirounga leonina."*

Bigg, Michael A. CENSUS OF CALIFORNIA SEA LIONS ON SOUTHERN VANCOUVER ISLAND, BRITISH COLUMBIA. *J. Mammal.* 54(1): 285-287, 1 fig. Feb. 1973. *WR 149: 54*
[Arctic Biol. Sta., Ste. Anne de Bellevue, Quebec, Canada.] *"Zalophus californianus* and *Eumetopias jubata."*

Boswall, Jeffery. THE SOUTH AMERICAN SEA LION *OTARIA BYRONIA* AS A PREDATOR ON PENGUINS. *Bull. British Ornithol. Club* 92(5): 129-132, [1 fig.]. Oct. 1972. *WR 149: 54*
Summary: Published and unpublished observations on Rockhopper, Gentoo and Magellanic Penguins as prey of the South American Sea Lion suggest that the relationship may be more frequent than was previously thought.

Briggs, K. T., and G. Victor Morejohn. BARNACLE ORIENTATION AND WATER FLOW CHARACTERISTICS IN CALIFORNIA GREY WHALES. *J. Zool. Proc. Zool. Soc. Lond.* 167 (3): 287-292, illus. 1972. [From Biol. Abstr. 55(2), 1973.] *WR 149: 54*
[Moss Landing Mar. Lab., Moss Landing, Calif.] *"Eschrichtius gibbosus."*

Bryden, M. M. BODY SIZE AND COMPOSITION OF ELEPHANT SEALS *(MIROUNGA LEONINA)*: ABSOLUTE MEASUREMENTS AND ESTIMATES FROM BONE DIMENSIONS. *J. Zool. Proc. Zool. Soc. Lond.* 167(3): 265-276, illus. 1972. [From Biol. Abstr. 55(2), 1973.] *WR 149: 54*
[Univ. Sydney, Sydney, Australia.]

Caldwell, David K., Melba C. Caldwell, and Griffith Arrindell. DWARF SPERM WHALES, *KOGIA SIMUS*, FROM THE LESSER ANTILLEAN ISLAND OF ST. VINCENT. *J. Mammal.* 54(2): 515-517. May 1973. *WR 149: 55*
[Univ. Fla., Gainesville.]

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Contents: *Ornithology in the Ussuriland: yesterday and today*, A. A. Nazarenko; *A synopsis of the birds of the nature reserve "Kedrovaya Pad"*, A. A. Nazarenko; *The birds of the islands in the north-western part of the Gulf Petra Velikogo*, V. I. Labzyuk, Yu. N. Nazarov, and V. A. Nechaev; *The birds of the secondary broad-leaved forests of Southern Primorye territory and some aspects of formation of the natural communities*, A. A. Nazarenko; *The biology and behaviour of the marsh tit*--Poecile palustris brevirostris *Taez. in the southernmost Primorye territory*, E. N. Panov; *On ecology of the great reed warbler*--Acrocephalus arundinaceus orientalis *(Temm. et Schleg.) on Lake Khanka*, N. N. Polivanova; *Feeding habits of the migrant ducks in the Khasan district, Southern Primorye territory*, Yu. V. Shibaev and N. M. Litvinenko; *The migration of the shore-birds on peninsula of De-Vries in the environs of Vladivostok*, M. A. Omelko; *On spring migration of the waterfowl in the southernmost of Khasan district, Southern Primorye territory*, Yu. V. Shibaev; *On the nesting of the sparrow-hawk*--Accipiter nisus *(L.) in Southern Primorye territory*, V. I. Labzyuk, Yu. N. Nazarov, V. A. Nechaev, and M. A. Omelko; *On the distribution of some birds in Southern Primorye territory*, A. A. Nazarenko; *On the distribution and biology of the gray-spotted flycatcher*--Muscicapa griseisticta *(Swinh.) in Southern Primorye territory*, A. A. Nazarenko; *Some data on feeding habits of the black-tailed gull*--Larus crassirostris *Vieill. in the Gulf of Amour*, Yu. N. Nazarov and Z. B. Smetanina; *On the distribution and biology of some birds in Southern Primorye territory*, V. A. Nechaev; *On the biology of the bull-headed shrike*--Lanius bucephalus *Temm. et Schleg. in Southern Primorye territory*, E. N. Panov; *On breeding biology of the pale-legged willow warbler*--Phylloscopus tenellipes *Swinh. in Southern Primorye territory*, Yu. B. Pukinski; *Ornithological finds in south of the Primorye territory*, Yu. V. Shibaev; and *Experimental catching of the shore-birds in Southern Primorye territory by means of automatic bow-net traps*, Yu. V. Shibaev and N. M. Litvinenko.

Mikami, S. [HISTOMETRIC STUDY OF THE AVIAN RETINA.] *Tori* 20: 36-40. 1970. [From Auk 90(1), 1973. In Japanese with English summ.] *WR 149: 61*
Comparison of retinas of *Caprimulgus indicus jotaka, Otus bakkamoena semitorques, Garrulus glandarius japonicus, Cygnus cygnus, Uria aalge inornata,* and domestic chicken.

Romanoff, Alexis L., and Anastasia J. Romanoff. PATHOGENESIS OF THE AVIAN EMBRYO / AN ANALYSIS OF CAUSES OF MALFORMATIONS AND PRENATAL DEATH. *John Wiley & Sons, Inc.* (New York). xiv + 476 p., 192 figs., 6 x 9.25 in. 1972. Price $22.50. *WR 149: 61*
Contents: Dynamics of development, Spontaneous malformations, Genetic mutations, Atmospheric changes, Ionizing radiation, Nutritional deficiency, Chemical teratogenecity, Hormonal derangement, Pathogenic afflictions, Traumatic disturbance, and Aberrant twinning.

Sibley, Charles G. THE RELATIONSHIPS OF THE SILKY FLYCATCHERS. *Auk* 90(2): 394-410, 3 figs. Apr. 1973. *WR 149: 61*
[Yale Univ., New Haven, Conn.] Electrophoretic studies of the eggwhite proteins indicate that the *Myadestes* and silky flycatchers are closely related. It is recommended that *Myadestes* and, perhaps, *Entomodestes*, be transferred to the Ptilogonatidae and that this family be placed next to the Turdidae.--Courtesy/ Paul A. Stewart.

Sibley, Charles G., and Jon E. Ahlquist. THE RELATIONSHIPS OF THE HOATZIN. *Auk* 90(1): 1-13, 4 figs. + 1 pl. Jan. 1973. *WR 149: 62*
[Yale Univ., New Haven, Conn.] It is suggested that the hoatzin *(Opisthocomus hoazin)* should be assigned to the Cuculiformes rather than the Galliformes.--Courtesy/ Paul A. Stewart.

Tucker, V. A. RESPIRATION DURING FLIGHT IN BIRDS. *Respir. Physiol.* 14: 75-82. 1972. [From Auk 90(2), 1973.] *WR 149: 62*
A review of avian respiration peculiarities, both demonstrated and suspected, including: contouring of body and adjustment of mass by respiratory system, coordination with wing movements, hyperventilation, low evaporative water loss, and tolerance to low partial pressures at high altitudes.

Willis, Edwin O. LOCAL DISTRIBUTION OF MIXED FLOCKS IN PUERTO RICO. *Wilson Bull.* 85(1): 75-77. Mar. 1973. *WR 149: 62*
[Princeton Univ., Princeton, N.J.] Courtesy/ Paul A. Stewart.

BIRDS--TECHNIQUES

Austin, G. T., and A. M. Rea. KEY TO AGE AND SEX DETERMINATION OF VERDINS. *Western Bird Bander* 46: 41. 1971. [From Auk 90(1), 1973.] *WR 149: 62*

Bielefeldt, John. THE RELATIVE PRODUCTIVITY OF FOOT AND CAR TRAVEL ON CHRISTMAS BIRD COUNTS. *Passenger Pigeon* 34(4): 163-166. Winter 1972. *WR 149: 62*

Collins, C. T. A NEW TECHNIQUE FOR CAPTURING WHITE-THROATED SWIFTS. *Western Bird Bander* 46: 6-7. 1971. [From Auk 90(1), 1973.] *WR 149: 62*
Details of a small mist-net rig on a long pole that can be held up in front of nesting/roosting holes. It works well until the birds learn to avoid it (several months).

Dieter, Michael P. SEX DETERMINATION OF EAGLES, OWLS, AND HERONS BY ANALYZING PLASMA STEROID HORMONES. *U.S. Fish Wildl. Serv. Spec. Sci. Rep. Wildl.* no. 167. iv + 13 p., 6 figs. May 1973. *WR 149: 62*
[Patuxent Wildl. Res. Cent., Laurel, Md.] Steroid hormone components from the plasma of several avian species, including bald eagles *(Haliaeetus leucocephalus)*, barn owls *(Tyto alba)*, and black-crowned night herons *(Nycticorax nycticorax)*, were separated by centrifugal chromatography on silica gel columns. Identification of sex was primarily by staining of steroid hormone bands with iodine, charring with sulfuric acid, and observing fluorescence under ultravoilet light. Techniques were standardized using plasma from known-sex Japanese quail *(Coturnix coturnix japonica)*, mallard ducks *(Anas platyrhynchos)*, and American kestrels *(Falco sparverius)*.--From abstr.

Grazhdankin, A. V., and T. S. Ponomareva. [DEVICE FOR RECORDING BIRD DYNAMIC ACTIVITY UNDER FIELD CONDITIONS.] *Zool. Zh.* 51(3): 438-440, illus. 1972. [From Biol. Abstr. 54(11), 1972. In Russian with English summ.] *WR 149: 62*

Langman, Vaughan A. A RADIO-BIOTELEMETRY SYSTEM FOR MONITORING BODY TEMPERATURE AND ACTIVITY LEVELS IN THE ZEBRA FINCH. *Auk* 90(2): 375-383, 6 figs. Apr. 1973. *WR 149: 62*
[Univ. Natal, Pietermaritzburg, South Africa.] A telemetry system was designed to make continuous recordings of body temperature, perching, feeding, and preening activities of caged birds.--Courtesy/ Paul A. Stewart.

Sappington, James N., and Jerome A. Jackson. A TECHNIQUE FOR MIST NETTING BIRDS AT COMMUNAL ROOSTS. *Inland Bird Banding News* 45(3): 102-106, 1 fig. May-June 1973. *WR 149: 62*
[Miss. State Univ., Mississippi State.] Details of the construction of a rig capable of supporting six mist nets for the netting of house sparrows from ground level to 30 feet above ground.

BIRDS--TECHNIQUES--Continued

Sosebee, J. B. AVIAN DIVERSITY IN TEXAS. *Bull. Tex. Ornithol. Soc.* 5: 24. 1972. [From Auk 90(2), 1973.] *WR 149: 63*
An analysis of species using a formula for determining diversity numerically suggests that Texas birds constitute a stable fauna with an existing high level of diversity.

Wiseman, Arthur J. HOMEMADE GADGETS FOR THE HANDYMAN BANDER. *Inland Bird Banding News* 45(1): 26-38, 18 figs. Jan.-Feb. 1973. *WR 149: 63*
[2073 Harrison Ave., Cincinnati, Ohio.] Various band holders, pliers, carrying or holding devices useful for bird-banders are described and illustrated.

BIRDS--MORPHOLOGY & PHYSIOLOGY

Anisimov, V. D. [EFFECT OF BIOLOGICAL SIGNALS ON THE HEART RATE OF BIRDS.] *Vestn. Mosk. Univ. Ser. 6 Biol. Pochvoved.* 27(2): 101-103, illus. 1972. [From Biol. Abstr. 55(10), 1973. In Russian with English summ.] *WR 149: 63*

Beason, Robert C., and Edwin C. Franks. DEVELOPMENT OF YOUNG HORNED LARKS. *Auk* 90(2): 359-363, 1 fig. Apr. 1973. *WR 149: 63*
[Western Ill. Univ., Macomb.] The feet of young horned larks *(Eremophila alpestris practicola)* develop relatively faster than the wings. It is suggested that larks are under selection pressure to be able to walk out of the nest before they can fly.--Courtesy/ Paul A. Stewart.

Blem, Charles R. STOMACH CAPACITY IN THE COMMON NIGHTHAWK. *Wilson Bull.* 84 (4): 492-493. Dec. 1972. *WR 149: 63*
[Va. Commonwealth Univ., Richmond.] Two common nighthawks *(Chordeiles minor)* carried in their stomachs 20.5 and 19.7 grams of food, or 25.4 and 24.6% of the food-free weight of the birds.--Courtesy/ Paul A. Stewart.

Casler, Clark L. THE AIR-SAC SYSTEMS AND BUOYANCY OF THE ANHINGA AND DOUBLE-CRESTED CORMORANT. *Auk* 90(2): 324-340, 12 figs. Apr. 1973. *WR 149: 63*
[Southern Ill. Univ., Carbondale.] *"Anhinga anhinga* and *Phalacrocorax auritus."*--Courtesy/ Paul A. Stewart.

Clark, George A., Jr. NOTCHED TOE PADS IN CLIMBING OSCINES. *Condor* 75(1): 119-120, 1 fig. Summer 1973. *WR 149: 63*
[Univ. Conn., Storrs.] Courtesy/ Paul A. Stewart.

Collins, Charles T. WEIGHTS OF SOME BIRDS OF NORTH-CENTRAL VENEZUELA. *Bull. British Ornithol. Club* 92(6): 151-153. Dec. 1972. *WR 149: 63*

Collins, C. T., and R. A. Bradley. ANALYSIS OF BODY WEIGHTS OF SPRING MIGRANTS IN SOUTHERN CALIFORNIA. (In two parts). *Western Bird Bander* 46: 38-40, 48-51. 1971. [From Auk 90(1), 1973.] *WR 149: 63*

Greenlaw, Jon S. AN ERYTHRISTIC SPECIMEN OF THE RUFOUS-SIDED TOWHEE. *Auk* 90(2): 428-429. Apr. 1973. *WR 149: 63*
[C. W. Post Coll., Greenvale, N.Y.] *"Pipilo erythrophthalmus."*--Courtesy/ Paul A. Stewart.

Haftorn, Svein. HYPOTHERMIA OF TITS IN THE ARCTIC WINTER. *Ornis Scand.* 3 (2): 153-166, 7 figs. 1972. *WR 149: 63*
[Univ. Trondheim, Trondheim, Norway.]

Hainsworth, F. Reed, and Larry L. Wolf. POWER FOR HOVERING FLIGHT IN RELATION TO BODY SIZE IN HUMMINGBIRDS. *Am. Nat.* 106(951): 589-596, illus. 1972. [From Biol. Abstr. 55(10), 1973.] *WR 149: 63*
[Syracuse Univ., Syracuse, N.Y.]

Hald-Mortensen, Poul. IAGTTAGELSER OVER SOLSORTENS *(TURDUS MERULA)* UNGEUDVIKLING. [OBSERVATIONS ON THE POSTEMBRYONIC DEVELOPMENT OF THE BLACKBIRD *(TURDUS MERULA).*] *Flora Fauna* 78(3): 53-64, illus. 1972. [From Biol. Abstr. 55(5), 1973. In Danish with English summ.] *WR 149: 64*
[Copenhagen Univ., Copenhagen, Denmark.]

Henry, Claude. LE POIDS CORPOREL ET LA LONGUEUR DE L'AILE CHEZ LES PASSEREAUX D'EUROPE: APPLICATION A L'ETUDE DE L'ISOLEMENT TROPHIQUE. [BODY WEIGHT AND WING-LENGTH OF EUROPEAN PASSERINES: APPLICATION TO THE STUDY OF TROPHIC ISOLATION.] *Terre Vie* 26(4): 571-582, 4 figs. Oct.-Dec. 1972. In French with English summ. *WR 149: 64*

Johnston, David W. CYTOLOGICAL AND CHEMICAL ADAPTATIONS OF FAT DEPOSITION IN MIGRATORY BIRDS. *Condor* 75(1): 108-113, 3 figs. Spring 1973. *WR 149: 64*
[Univ. Fla., Gainesville.] Courtesy/ Paul A. Stewart.

Jones, E. J. THE INCUBATION PATCH OF BIRDS. *Biol. Rev.* 46: 315-339. 1971. [From Auk 90(1), 1973.] *WR 149: 64*
"This thorough review covers especially the hormonal control of incubation patch formation and also discussed its occurrence in various groups, its function, and other related topics."

Kendeigh, S. Charles. ENERGY CONTROL OF SIZE LIMITS IN BIRDS. *Am. Nat.* 106 (947): 79-88, illus. 1972. [From Biol. Abstr. 54(11), 1972.] *WR 149: 64*
[Univ. Ill., Champaign.]

Leisler, B. DIE MAUSER DES MARISKENSÄNGERS *(ACROCEPHALUS MELANOPOGON)* ALS ÖKOLOGISCHES PROBLEM. [THE MOLT IN THE MOUSTACHED WARBLER *(ACROCEPHALUS MELANOPOGON)* AS AN ECOLOGICAL PROBLEM.] *J. Ornithol.* 113: 191-206. 1972. [From Auk 90(2), 1973. In German with English summ.] *WR 149: 64*

Morton, Martin L., Judith L. Horstmann, and Cynthia Carey. BODY WEIGHTS AND LIPIDS OF SUMMERING MOUNTAIN WHITE-CROWNED SPARROWS IN CALIFORNIA. *Auk* 90(1): 83-93, 4 figs. Jan. 1973. *WR 149: 64*
[Occidental Coll., Los Angeles, Calif.] Females of *Zonotrichia leucophrys oriantha* had greater stores of fat than males from the time of their arrival on their breeding grounds until their young were hatched. When young were being fed in the nest females lost 12.8% and males lost 7.8% of their body weight. Both sexes gained about 20% in weight from the summer low to the autumn high. At the time of migration total lipids averaged about 15% of the body weight.--From summ. Courtesy/ Paul A. Stewart.

Niles, David Matheson. ADAPTIVE VARIATION IN BODY SIZE AND SKELETAL PROPORTIONS OF HORNED LARKS OF THE SOUTHWESTERN UNITED STATES. *Ph.D. thesis, Univ. Kans.* 75 p. 1972. [From Diss. Abstr. Int. B Sci. Eng. 33(11), 1973.] *WR 149: 64*

Pearson, D. J. MOULT OF SOME PALAEARCTIC WARBLERS WINTERING IN UGANDA. *Bird Study* 20(1): 24-36, 5 figs. Mar. 1973. *WR 149: 64*
[Univ. Nairobi, Box 30197, Nairobi, Kenya.]

Raikow, Robert J. ABSENCE OF THE AMBIENS MUSCLE IN THE COMMON MYNA: A CORRECTION. *Auk* 90(2): 421. Apr. 1973. *WR 149: 64*
[Univ. Pittsburgh, Pittsburgh, Pa.] Similar to other Passeriformes, the common myna *(Acridotheres tristis)* lacks the ambiens muscle.--Courtesy/ Paul A. Stewart.

Rueger, Arnd. FUNKTIONELL-ANATOMISCHE UNTERSUCHUNGEN AN SPECHTEN. [FUNCTIONAL AND ANATOMICAL STUDIES OF WOODPECKERS.] *Z. Wiss. Zool.* 184(1/2): 63-163, illus. 1972. [From Biol. Abstr. 55(10), 1973. In German with English summ.] *WR 149: 64*
[Staatl. Vogelschutzwarte Schleswig-Holstein, Olshausenst. 40/60, Kiel, Germany.] The body shape of *Jynx torquilla, Dendrocopos minor, D. medius,*

D. major, Picoides tridactylus, Picus canus, P. viridis, Colaptes rupicola, and *Dryocopus martius* is analysed by measuring skeleton, tail feathers and muscle weights.

Shumakov, M. E., N. V. Vinogradova, and V. A. Paevskii. [MOLT AND MIGRATORY STATE IN REARED CHAFFINCH *(FRINGILLA COELEBS COELEBS* L.).] *Zool. Zh.* 51(1): 113-118, illus. 1972. [From Biol. Abstr. 55(9), 1973. In Russian with English summ.] *WR 149: 65*
[Zool. Inst., Acad. Sci. USSR, Leningrad, USSR.]

Stresemann, Erwin, and Vesta Stresemann. UEBER DIE MAUSER IN DER GRUPPE *LANIUS ISABELLINUS.* [ON THE MOULT OF THE GROUP *LANIUS ISABELLINUS.*] *J. Ornithol.* 113(1): 60-75. 1972. [From Biol. Abstr. 55(6), 1973. In German with English summ.] *WR 149: 65*
[Kamillenst. 28, Berlin, Germany.]

Zimmerman, John L., and James V. Morrison. VERNAL TESTES DEVELOPMENT IN TROPICAL-WINTERING DICKCISSELS. *Wilson Bull.* 84(4): 475-481, 1 fig. Dec. 1972. *WR 149: 65*
[Kans. State Univ., Manhattan.] "The question of why gonads of dickcissels do not begin their development earlier is still not answered."--Courtesy/ Paul A. Stewart.

BIRDS--BEHAVIOR

Aschoff, J. [PHASING OF DIURNAL RHYTHMS AS A FUNCTION OF SEASON AND LATITUDE.] *Oecologia* 3: 125-165. 1969. [From Auk 90(1), 1973. In German with English summ.] *WR 149: 65*

Baptista, Luis F. WILD HOUSE FINCH SINGS WHITE-CROWNED SPARROW SONG. *Z. Tierpsychol.* 30(3): 266-270, illus. 1972. [From Biol. Abstr. 54(11), 1972. In English with German summ.] *WR 149: 65*
[Univ. Calif., Berkeley.]

Beesley, J. S. S. THE BREEDING SEASONS OF BIRDS IN THE ARUSHA NATIONAL PARK, TANZANIA. *Bull. British Ornithol. Club* 93(1): 10-20. Mar. 1973. *WR 149: 65*
Includes data on clutch sizes.

Berger, Martin. FORMATIONSFLUG OHNE PHASENBEZIEHUNG DER FLUEGELSCHLAEGE. [FORMATION FLIGHT WITHOUT PHASE RELATIONSHIP OF WING BEATS.] *J. Ornithol.* 113 (2): 161-169, illus. 1972. [From Biol. Abstr. 55(9), 1973. In German with English summ.] *WR 149: 65*
[Landesmus. Naturkunde, Himmelreichallee 50, Muenster/Westfallen, Germany.]

Bergmann, H.-H. EINE VERGLEICHEND UNTERSUCHUNG VON ALARMRUFEN VIER MEDITERRANER GRASMÜCKENARTEN *(SYLVIA CANTILLANS, S. CONSPICILLATA, S. UNDATA, S. MELANOCEPHALA).* [A COMPARATIVE STUDY OF THE ALARM CALLS OF FOUR MEDITERRANEAN WARBLERS *(SYLVIA CANTILLANS, S. CONSPICILLATA, S. UNDATA,* AND *S. MELANOCEPHALA).*] *Z. Tierpsychol.* 30: 113-131. 1972. [From Auk 90(1), 1973. In German with English summ.] *WR 149: 65*

Bolwig, Niels. AGONISTIC AND SEXUAL BEHAVIOR OF THE AFRICAN OSTRICH *(STRUTHIO CAMELUS). Condor* 75(1): 100-105, 4 figs. Spring 1973. *WR 149: 65*
[Univ. Ibadan, Nigeria.] Courtesy/ Paul A. Stewart.

Britton, P. L. SEASONAL MOVEMENTS OF THE BLACK CUCKOO-SHRIKES *CAMPEPHAGA PHOENICEA* AND *C. FLAVA*, ESPECIALLY IN EASTERN AFRICA. *Bull. British Ornithol. Club* 93(1): 41-48. Mar. 1973. *WR 149: 65*

Brooke, R. K. HOUSE SPARROWS FEEDING AT NIGHT IN NEW YORK. *Auk* 90(1): 206. Jan. 1973. *WR 149: 66*
[P.O. Box 1690, Salisbury, Rhodesia.] House sparrows *(Passer domesticus)* were foraging near midnight 80 stories up on the Empire State Building.--Courtesy/ Paul A. Stewart.

Brosset, A. ETUDE DE LA REPRODUCTION DE L'ECHENILLEUR POURPRE *CAMPEPHAGA QUISCALINA* FINSCH. [STUDY OF THE REPRODUCTION OF *CAMPEPHAGA QUISCALINA* FINSCH.] *Alauda* 40(2): 145-153, illus. 1972. [From Biol. Abstr. 54(11), 1972. In French with English summ.] *WR 149: 66*
[Lab. Primatol. Ecol. Trop., B.P. 18, Makokou, Gabon.]

Brown, Charles. A SECOND BROOD ATTEMPT BY THE PURPLE MARTIN. *Auk* 90(2): 442. Apr. 1972. *WR 149: 66*
[184 W. Hunt St., Sherman, Tex.] *"Progne subis."*--Courtesy/ Paul A. Stewart.

Cade, Tom J. SUN-BATHING AS A THERMOREGULATORY AID IN BIRDS. *Condor* 75(1): 106-108, 2 figs. Spring 1973. *WR 149: 66*
[Cornell Univ., Ithaca, N.Y.] "It would be a mistake to conclude that sun bathing is mainly or only a thermoregulatory mechanism."--Courtesy/ Paul A. Stewart.

Calder, William A. MICROHABITAT SELECTION DURING NESTING OF HUMMINGBIRDS IN THE ROCKY MOUNTAINS. *Ecology* 54(1): 127-134, 6 figs. Winter 1973. *WR 149: 66*
[Univ. Ariz., Tucson.] Abstract: The importance of nest location in reducing heat loss by radiation and convection is indicated by a preliminary examination of the nest sites of Broad-tailed and Calliope hummingbirds with regard to chilling nights in the Rocky Mountains. Radiation losses are estimated from surface temperatures. Nest diameter and weight increase as a function of time in the nesting season.--Courtesy/ Paul A. Stewart.

Callegari, Eugenio. COMPORTAMENTO DI UN CUCULO DAL CIUFFO IN CATTIVITA. [THE BEHAVIOR OF A CUCKOO IN CAPTIVITY.] *Riv. Ital. Ornitol.* 42(1/2): 174-176. 1972. [From Biol. Abstr. 55(1), 1973. In Italian.] *WR 149: 66*

Cody, Martin L., and Christopher B. J. Cody. TERRITORY SIZE, CLUTCH SIZE, AND FOOD IN POPULATIONS OF WRENS. *Condor* 74(4): 473-477, 2 figs. Winter 1972. *WR 149: 66*
[Univ. Calif., Los Angeles.] The winter wren *(Troglodytes troglodytes)* produces smaller clutches on North Atlantic islands than on the continents. The explanation was left undetermined.--Courtesy/ Paul A. Stewart.

Cox, George W. HYBRIDIZATION BETWEEN MOURNING AND MacGILLIVRAY'S WARBLERS. *Auk* 90(1): 190-191, 1 fig. Jan. 1973. *WR 149: 66*
[Calif. State Univ., San Diego.] *"Oporornis philadelphia* and *O. tolmiei."*

Curio, E. DIE AKUTISCHE WIRKUNG VON FEINDALARMEN AUF EINIGE SINGVÖGEL. [THE ACUTE EFFECT OF ENEMY ALARM CALLS UPON SOME SONGBIRDS.] *J. Ornithol.* 112: 365-372. 1971. [From Auk 90(1), 1973. In German with English summ.] *WR 149: 66*

Custer, Thomas W. SNOWY OWL PREDATION ON LAPLAND LONGSPUR NESTLINGS RECORDED ON FILM. *Auk* 90(2): 433-435, 1 fig. Apr. 1973. *WR 149: 66*
[Univ. Calif., Berkeley.] *Nyctea scandiaca* preys on *Calcarius lapponicus*.--Courtesy/ Paul A. Stewart.

Daniel, M. J. FEMALE BLACKBIRD ATTACKING MIRROR REFLECTION. *Notornis* 18: 50-51. 1971. [From Auk 90(1), 1973.] *WR 149: 66*
Describes unusually intense and prolonged territorial behavior by a female *Turdus merula*.

Davis, John. HABITAT PREFERENCES AND COMPETITION OF WINTERING JUNCOS AND GOLDEN-CROWNED SPARROWS. *Ecology* 54(1): 174-180, 3 figs. Winter 1973. *WR 149: 67*

[Univ. Calif., Carmel Valley.] Removal of golden-crowned sparrows *(Zonotrichia atricapilla)* resulted in increased use of willow thickets by slate-colored juncos *(Junco hyemalis)*. Competition between the two species for food was alleviated when the sparrows fed on sprouting annuals, rather than the seeds used by juncos. Although outnumbered 5:2, the larger sparrows were able to exclude juncos from habitat under competition.--From abstr. Courtesy/ Paul A. Stewart.

Diamond, Jared M. BIOGEOGRAPHIC KINETICS: ESTIMATION OF RELAXATION TIMES FOR AVIFAUNAS OF SOUTHWEST PACIFIC ISLANDS. *Proc. Natl. Acad. Sci. USA* 69(11): 3199-3203, illus. 1972. [From Biol. Abstr. 55(9), 1973.] *WR 149: 67*

[Univ. Calif. Med. Cent., Los Angeles.]

Dunford, Christopher, and Eileen Dunford. INTERSPECIFIC AGGRESSION OF RESIDENT BROAD-TAILED AND MIGRANT RUFOUS HUMMINGBIRDS. *Condor* 74(4): 479. Winter 1972. *WR 149: 67*

[Univ. Ariz., Tucson.] *"Selasphorus platycercus* and *S. rufus."*--Courtesy/ Paul A. Stewart.

Emlen, John T. TERRITORIAL AGGRESSION IN WINTERING WARBLERS AT BAHAMA AGAVE BLOSSOMS. *Wilson Bull.* 85(1): 71-74. Mar. 1973. *WR 149: 67*

[Univ. Wis., Madison.] "In conclusion, I propose that the energy-expensive overt aggression displayed by these birds is a transitory and maladaptive over-extension of a normally mild territorial dominance precipitated by the sudden appearance of a concentrated swarm of invaders on their feeding territories."--Courtesy/ Paul A. Stewart.

Emmrich, Rainer. BEOBACHTUNGEN ZUR BRUTBIOLOGIE UND- OEKOLOGIE DER DORNGRASMUECKE *(SYLVIA COMMUNIS* LATH.) (AVES, SYLVIIDAE). [OBSERVATIONS ON THE BREEDING BIOLOGY AND ECOLOGY OF THE WHITETHROAT WARBLER *(SYLVIA COMMUNIS* LATH.) (AVES, SYLVIIDAE).] *Zool. Abh.* (Dresden) 30(21): 285-296, illus. 1971. [From Biol. Abstr. 54(11), 1972. In German.] *WR 149: 67*

Enemar, Anders, and Bengt Sjöstrand. EFFECTS OF THE INTRODUCTION OF PIED FLYCATCHERS *FICEDULA HYPOLEUCA* ON THE COMPOSITION OF A PASSERINE BIRD COMMUNITY. *Ornis Scand.* 3(2): 79-89, 4 figs. 1972. *WR 149: 67*

[Univ. Gothenburg, Gothenburg, Sweden.] Abstract: A nest-box experiment was carried out in rich subalpine birch forests, Swedish Lapland. During a six-year period the passerine bird density in an area (23 hectares) with a surplus of nest-boxes was compared with the density in a control area (29 hectares) without boxes. A large number of the nest-boxes were occupied by one species, the Pied Flycatcher, increasing the bird density in the nest-box area by about 75 per cent. This immigration of the flycatcher did not cause a demonstrable change in the population numbers of the other species. The year to year fluctuations of the flycatcher numbers were in accord with the fluctuations of the other species taken together in the same area and also with the fluctuations of the bird numbers in the control area. The result of this investigation is compared with that of a similar experiment in Southern Sweden.

Field, G. D. BREEDING BEHAVIOUR OF A PAIR OF BLACK AND WHITE FLYCATCHERS *BIAS MUSICUS* AT FREETOWN. *Nigerian Ornithol. Soc. Bull.* 8: 3-6. 1971. [From Auk 90(1), 1973.] *WR 149: 67*

Fisk, Lanny H. NOTES ON NECTAR FEEDING BY ORIOLES. *Auk* 90(1): 208-209, 1 fig. Jan. 1973. *WR 149: 67*

[Loma Linda Univ., Loma Linda, Calif.] Based on observations of California hooded orioles feeding on nectar supplied in hummingbird feeders, it is suggested that naturally occurring nectar may be a common item in the diet of orioles.--Courtesy/ Paul A. Stewart.

Glase, Jon Charles. AN ECOLOGICAL STUDY OF THE SOCIAL ORGANIZATION OF FLOCKS OF THE BLACK-CAPPED CHICKADEE, *PARUS ATRICAPILUS*. *Ph.D. thesis, Cornell Univ.* 146 p. 1972. [From Diss. Abstr. Int. B Sci. Eng. 33(10), 1972.] *WR 149: 68*

Goettinger, Hans Rudolf, and Joseph Achermann. DIE GESANGSENTWICKLUNG DES KLEINELSTERCHENS *(SPERMESTES CUCULLATA)*. [SONG DEVELOPMENT OF *SPERMESTES CUCULLATA*.] *J. Ornithol.* 113(1): 37-48, illus. 1972. [From Biol. Abstr. 55 (6), 1973. In German with English summ.] *WR 149: 68*
[Max-Planck. Inst. Verhaltenphysiol., Seewiesen, Germany.]

Graber, Jean W., and Richard W. Graber. NESTING DISTRIBUTION OF THE VEERY IN ILLINOIS. *Ill. Audubon Bull.* no. 164. p. 50-52, illus. Winter-Spring 1973. *WR 149: 68*
[Ill. Nat. Hist. Surv., Urbana.]

Gramza, Anthony F. AVIAN VOCAL MIMICRY: THE PHENOMENON AND ITS ANALYSIS. *Z. Tierpsychol.* 30(3): 259-265. 1972. [From Biol. Abstr. 54(11), 1972. In English with German summ.] *WR 149: 68*
[Univ. Ill., Champaign.]

Greenlaw, Jon S. THE USE OF SAWDUST PILES BY NESTING BANK SWALLOWS. *Wilson Bull.* 84(4): 494-496, 1 fig. Dec. 1972. *WR 149: 68*
[C. W. Post Coll., Greenvale, N.Y.] *"Riparia riparia."*--Courtesy/ Paul A. Stewart.

Grubb, Thomas C., Jr. ABSENCE OF "INDIVIDUAL DISTANCE" IN THE TREE SWALLOW DURING ADVERSE WEATHER. *Auk* 90(2): 432-433. Apr. 1973. *WR 149: 68*
[Rutgers Univ., New Brunswick, N.J.] "In this case huddling together likely husbanded energy reserves in the face of low temperature, high wind, and apparent scarcity of prey."--Courtesy/ Paul A. Stewart.

Haverschmidt, F. WHITE-RINGED FLYCATCHER NEST-BUILDING IN OLD NEST OF THE YELLOW-RUMPED CACIQUE. *Auk* 90(1): 207-208. Jan. 1973. *WR 149: 68*
[16 Wolfskuilstraat, Ommen, Holland.] In addition to nesting in old woodpecker cavities, the white-ringed flycatcher *(Conopias parva)* was found nesting in pendant nests of the yellow-rumped cacique *(Cacicus cela)*.--Courtesy/ Paul A. Stewart.

Hildén, O. [LATE BREEDING IN *CARDUELIS* SPECIES.] *Ornis Fenn.* 49: 14-15. 1972. [From Auk 90(2), 1973. In Finnish with English summ.] *WR 149: 68*

Hill, Elwood F. OBSERVATIONS OF BIRDS WATERING FROM SMALL RECEPTACLES SERVING AS POTENTIAL MOSQUITO-BREEDING SITES. *J. Econ. Entomol.* 65(2): 608-609. 1972. [From Biol. Abstr. 54(11), 1972.] *WR 149: 68*
[Patuxent Wildl. Res. Cent., Laurel, Md.]

Järbäck, A., and N. Järbäck. [FEMALE COLLARED FLYCATCHER, *FICEDULA ALBICOLLIS*, INTERBREEDING WITH MALE PIED FLYCATCHER, *F. HYPOLEUCA*.] *Vår Fågelvärld* 31: 129. 1972. [From Auk 90(1), 1973. In Swedish with English summ.] *WR 149: 68*

Johansson, H. CLUTCH SIZE AND BREEDING SUCCESS IN SOME HOLE NESTING PASSERINES IN CENTRAL SWEDEN. *Ornis Fenn.* 49: 1-6. 1972. [From Auk 90(2), 1973.] *WR 149: 68*
A 12-year study with more than 1,000 nests (in breeding boxes) of *Ficedula hypoleuca* and three *Parus* spp.

Jouventin, Pierre. NOTE SUR L'EXISTENCE ET LA SIGNIFICATION D'UNE RYTHMICITE DES PARADES MUTUELLES. [NOTE CONCERNING THE EXISTENCE AND SIGNIFICANCE OF A RHYTHMICITY IN MUTUAL DISPLAYS.] *Alauda* 40(1): 56-62, illus. 1972. [From Biol. Abstr. 54(11), 1972. In French with English summ.] *WR 149: 68*
[Mus. Natl. Hist. Nat., Paris, France.]

Kale, Herbert W. II. HOUSE FINCH NESTS ABANDONED AFTER SNOW. *Wilson Bull.* 85(1): 87. Mar. 1973. *WR 149: 69*
[Entomol. Res. Cent., P.O. Box 520, Vero Beach, Fla.] *"Carpodacus mexicanus."* --Courtesy/ Paul A. Stewart.

Kaufman, Donald W. SHRIKE PREY SELECTION: COLOR OR CONSPICUOUSNESS. *Auk* 90 (1): 204-206. Jan. 1973. *WR 149: 69*
[Univ. Tex., Austin.] In one test loggerhead shrikes *(Lanius ludovicianus)* selected the more conspicuous white over agouti mice; however, agouti were selected over white mice where both were relatively easy to see, agreeing with the concept of a specific search image.--Courtesy/ Paul A. Stewart.

Kemp, A. C., M. I. Kemp, R. A. C. Jensen, and C. F. Clinning. RECORDS OF BROOD PARASITISM FROM CENTRAL SOUTH WEST AFRICA. *Ostrich* 43(3): 145-148. 1972. [From Biol. Abstr. 55(9), 1973.] *WR 149: 69*
[Transvaal Mus., Pretoria, South Africa.] Records of brood parasitism involving 3 common parasites *(Clamator glandarius, Chrysococcyx caprius* and *Indicator minor)* were obtained during recent field studies in South West Africa.

Kilham, Lawrence. RETENTION OF EGG IN A WILD DOWNY WOODPECKER. *Wilson Bull.* 84(4): 493-494. Dec. 1972. *WR 149: 69*
[Dartmouth Med. School, Hanover, N.H.] A female downy woodpecker *(Dendrocopos pubescens)* recovered and laid a clutch of eggs after having suffered from egg binding.--Courtesy/ Paul A. Stewart.

King, James R. VARIATION IN THE SONG OF THE RUFOUS-COLLARED SPARROW, *ZONOTRICHIA CAPENSIS*, IN NORTHWESTERN ARGENTINA. *Z. Tierpsychol.* 30(4): 344-373, illus. 1972. [From Biol. Abstr. 55(4), 1973. In English with German summ.] *WR 149: 69*
[Wash. State Univ., Pullman.]

King, James R. REPRODUCTIVE RELATIONSHIPS OF THE RUFOUS-COLLARED SPARROW AND THE SHINY COWBIRD. *Auk* 90(1): 19-34, 1 fig. Jan. 1973. *WR 149: 69*
[Wash. State Univ., Pullman.] The incidence of parasitism of *Zonotrichia capensis* by *Molothrus bonariensis* was 66% during the entire breeding season. Productivity of their own young by the sparrows was reduced by about 0.4 birds per nest by cowbird parasitism.--Courtesy/ Paul A. Stewart.

Kisiel, Donald S. FORAGING BEHAVIOR OF *DENDROCOPUS VILLOSUS* AND *D. PUBESCENS* IN EASTERN NEW YORK STATE. *Condor* 74(4): 393-398. Winter 1972. *WR 149: 69*
[Colo. State Univ., Fort Collins.] Hairy woodpeckers forage on a wide variety of trees, chiefly on the trunks and larger branches; whereas downy woodpeckers forage mostly on small branches of elm. Male downy woodpeckers forage on the outer branches; whereas females forage on the larger inner branches. Female hairy woodpeckers forage on smaller branches than the males.--Courtesy/ Paul A. Stewart.

Koepcke, M. ÜBER DIE RESISTENZFORMEN DER VOGELNESTER IN EINEM BEGRENZTEN GEBIET DES TROPISCHEN REGENWALDES IN PERU. [ON VARIOUS STRATAGEMS OF NESTING BIRDS IN A STUDY AREA IN THE TROPICAL RAIN FOREST OF PERU.] *J. Ornithol.* 113: 138-160. 1972. [From Auk 90(2), 1973. In German with English summ.] *WR 149: 69*
A field study of the various means used by birds to evade nest predation.

Kroodsma, Donald E. COEXISTENCE OF BEWICK'S WRENS AND HOUSE WRENS IN OREGON. *Auk* 90(2): 341-352, 4 figs. Apr. 1973. *WR 149: 69*
[Rockefeller Univ., R.D. 2, Tyrell Rd., Millbrook, N.Y.] The territories of Bewick's wrens *(Thryomanes bewickii)* and house wrens *(Troglodytes aedon)* overlapped extensively at two locations. Competition appeared to be diminished by differences in habitat preference and timing of the breeding periods.--Courtesy/ Paul A. Stewart.

Lazarus, John, and John H. Crook. THE EFFECTS OF LUTEINIZING HORMONE, OESTROGEN AND OVARIECTOMY ON THE AGONISTIC BEHAVIOUR OF FEMALE *QUELEA QUELEA*. *Anim. Behav.* 21(1): 49-60, 3 figs. Feb. 1973. *WR 149: 70*
[Univ. Newcastle-Upon-Tyne, Newcastle-Upon-Tyne, England.]

Leck, Charles F. DOMINANCE RELATIONSHIPS IN NECTAR-FEEDING BIRDS AT ST. CROIX. *Auk* 90(2): 431-432, 1 fig. Apr. 1973. *WR 149: 70*
[Rutgers Univ., New Brunswick, N.J.] "That nectar-feeders exhibit competitive aggression while the fruit-feeders usually share mutual benefits of flocking at superabundant resources seems to be a fundamental difference of the two feeding ecologies."--Courtesy/ Paul A. Stewart.

Lederer, Roger Joseph. FORAGING BEHAVIOR AND NICHE OVERLAP IN SEVEN SPECIES OF NORTH AMERICAN FLYCATCHERS (TYRANNIDAE). *Ph.D. thesis, Univ. Ill.* (Urbana-Champaign). 95 p. 1972. [From Diss. Abstr. Int. B Sci. Eng. 33(10), 1972.] *WR 149: 70*

Lemon, Robert E., and Christopher Chatfield. ORGANIZATION OF SONG OF ROSE-BREASTED GROSBEAKS. *Anim. Behav.* 21(1): 28-44, 8 figs. Feb. 1973. *WR 149: 70*
[McGill Univ., Montreal, Canada.]

Lewis, Dale M. IMPORTANCE OF FACE MASK IN SEXUAL RECOGNITION AND TERRITORIAL BEHAVIOR IN THE YELLOWTHROAT. *Jack-Pine Warbler* 50(4): 98-109, 2 figs. Dec. 1972. *WR 149: 70*
[Univ. Mich., Ann Arbor.] *"Geothlypis trichas."*

Lewis, Robert A. WHITE-CROWNED SPARROW PARASITIZED BY BROWN-HEADED COWBIRD IN WESTERN WASHINGTON. *Auk* 90(2): 429-431. Apr. 1973. *WR 149: 70*
[Univ. Wash., Seattle.] *Zonotrichia leucophrys pugetensis* parasitized by *Molothrus ater*.--Courtesy/ Paul A. Stewart.

LÖhrl, H. ZUM VERHALTEN DES WEISSMASKENBAUMHOPFES *(PHOENICULUS BOLLEI)* (BEWEGUNGSWEISE, NAHRUNGSAUFNAHME UND SOZIALVERHALTEN). [ON THE BEHAVIOR OF THE BUFF-HEADED WOODHOOPOE *(PHOENICULUS BOLLEI)* (PATTERNS OF MOVEMENT, FEEDING AND SOCIAL BEHAVIOR).] *J. Ornithol.* 113: 49-52. 1972. [From Auk 90(2), 1973. In German with English summ.] *WR 149: 70*

Madge, S. G. THE NEST AND EGGS OF THE PURPLE-THROATED CUCKOO SHRIKE *CAMPEPHAGA QUISCALINA*. *Bull. British Ornithol. Club* 92(6): 145-147. Dec. 1972. *WR 149: 70*

Minock, Michael E. INTERSPECIFIC AGGRESSION BETWEEN BLACK-CAPPED AND MOUNTAIN CHICKADEES AT WINTER FEEDING STATIONS. *Condor* 74(4): 454-461. Winter 1972. *WR 149: 70*
[Univ. Wis.-Fox Valley, Menasha.] Black-capped chickadees *(Parus atricapillus)* won most encounters with mountain chickadees *(P. gambelis)*, but this winning was influenced by the sex of the participants, individual differences, and site of the encounter relative to the winter range of black-caps.--Courtesy/ Paul A. Stewart.

Morse, Douglass H. THE FORAGING OF SMALL POPULATIONS OF YELLOW WARBLERS AND AMERICAN REDSTARTS. *Ecology* 54(2): 346-355, 3 figs. Early Spring 1973. *WR 149: 70*
[Univ. Md., College Park.] Yellow warblers *(Dendroica petechia)* and American redstarts *(Setophaga ruticilla)* divided space horizontally, with yellow warblers feeding lower than redstarts. Redstarts used dead limbs and hawked for insects more than yellow warblers. Both species used deciduous growth more than predicted by chance.--From abstr. Courtesy/ Paul A. Stewart.

Mosher, John Ivan. AN ANALYSIS OF FLOCK ORGANIZATION IN BLACK-CAPPED CHICKADEES. *Ph.D. thesis, Utah State Univ.* 110 p. 1972. [From Diss. Abstr. Int. B Sci. Eng. 33(9), 1973.] *WR 149: 70*

Mueller, H. C. SUNBATHING IN BIRDS. *Z. Tierpsychol.* 30: 253-258. 1972. [From Auk 90(1), 1973.] *WR 149: 71*
Naive, hand-reared hawks were tested in the laboratory. Sunbathing was shown in response to increase in illumination, not heat. In review, there appear to be at least three distinct types of sunbathing behavior, two of which probably function in heat conservation but the rationale for the third remains obscure.

Nechaev, V. A. [BIOLOGY OF BREEDING OF *CUCULUS POLIOCEPHALUS POLIOCEPHALUS* IN THE MARITIME TERRITORY.] *Zool. Zh.* 51(5): 767-770. 1972. [From Biol. Abstr. 55(3), 1973. In Russian with English summ.] *WR 149: 71*

Nothdurft, Wilhelm. BRUT DES FICHTENKREUZSCHNABELS *(LOXIA CURVIROSTRA)* IM SUEDLICHEN BADEN-WUERTTEMBERG. [BROOD OF THE CROSSBILL *(LOXIA CURVIROSTRA)* IN THE SOUTH OF BADEN-WUERTTEMBERG.] *Ans. Ornithol. Ges. Bayern* 11(2): 185-189, illus. 1972. [From Biol. Abstr. 55(5), 1973. In German with English summ.] *WR 149: 71*
[Rebweg 8, Frickingen, Germany.]

Oppenheim, Ronald W. PREHATCHING AND HATCHING BEHAVIOUR IN BIRDS: A COMPARATIVE STUDY OF ALTRICIAL AND PRECOCIAL SPECIES. *Anim. Behav.* 20(4): 644-655. Nov. 1972. *WR 149: 71*
[N.C. Dep. Mental Health, Raleigh.] Abstract: The prehatching and hatching behaviour of avian embryos from eleven different species, representing precocial, semi-precocial and altricial forms, were examined during the final 2 to 6 days of incubation. It was found that, while certain minor differences do exist among these species, there was a remarkable similarity in the sequence, character and quantitative aspects of prehatching and hatching behaviour in all eleven species. Although there is at least one well documented example of hatching being accomplished in a completely different manner than that seen in the eleven species of the present study (i.e. the family Megapodiidae), it was concluded that prehatching and hatching behaviour represents a stable and conservative feature in avian evolution.

Peloguin, E. Paul. CONFLICT BETWEEN A MALLARD HEN WITH BROOD AND A MALE RED-WINGED BLACKBIRD. *Auk* 90(2): 422. Apr. 1973. *WR 149: 71*
[Mich. State Univ., East Lansing.] The female mallard *(Anas platyrhynchos)* flew at and struck the red-winged blackbird *(Agelaius phoeniceus)* with its breast and knocked the blackbird into the water.--Courtesy/ Paul A. Stewart.

Petrinovich, Lewis, Robert M. Yoder, and Charles W. Dobson. THE SIGNIFICANCE OF WHITE-CROWNED SPARROW SONG. *Behav. Biol.* 7(6): 795-803, illus. 1972. [From Biol. Abstr. 55(9), 1973.] *WR 149: 71*
[Univ. Calif., Riverside.] *"Zonotrichia leucophrys."*

Prescott, Kenneth Wade. DISTRACTION DISPLAY AND "NATURAL" DEATH OF A BLUE JAY. *Inland Bird Banding News* 45(3): 107. May-June 1973. *WR 149: 71*
[15 Timberlane Dr., Pennington, N.J.]

Proctor, Noble S. TURKEY VULTURE HARASSED IN FLIGHT BY MALLARD PAIR. *Wilson Bull.* 85(1): 78. Mar. 1973. *WR 149: 71*
[Southern Conn. State Coll., 501 Crescent St., New Haven.] *"Cathartes aura* and *Anas platyrhynchos."*--Courtesy/ Paul A. Stewart.

Pulliam, H. Ronald. COMPARATIVE FEEDING ECOLOGY OF A TROPICAL GRASSLAND FINCH *(TIARIS OLIVACEA). Ecology* 54(2): 284-299, 7 figs. Early Spring 1973. *WR 149: 71*
[Univ. Ariz., Tucson.] Despite the presence of less competition on the island of Jamaica, yellow-faced grassquits are less abundant there than on the mainland in Costa Rica, and they are found in about the same number of habitats in both places. There seemed to be no changes in the magnitude, variance, and sexual dimorphism of bill size of island grassquits which would lead to their eating more kinds of food than the mainland grassquits. However, the grassquits from Jamaica were less stereotyped in their choice of seed size than were the Costa Rican grassquits.--Courtesy/ Paul A. Stewart.

Rapport, D. J. AN OPTIMIZATION MODEL OF FOOD SELECTION. *Am. Nat.* 105: 575-587. 1971. [From Auk 90(1), 1973.] *WR 149: 72*

Razack, Abdur. STUDIES ON THE HOUSE SWIFT, *APUS AFFINIS* (J. E. GRAY): IX. BREEDING BIOLOGY. *Pavo Indian J. Ornithol.* 6(1/2): 31-58. 1968 (1971). [From Biol. Abstr. 55(6), 1973.] *WR 149: 72*
[Visvodaya Coll., Venketagiri, Andhra Pradesh, India.]

Rustad, Orwin A. TREE SWALLOW NESTING STUDY ON A BLUEBIRD TRAIL IN SOUTH CENTRAL MINNESOTA. *Loon* 44(4): 100-105. Winter 1972. *WR 149: 72*
[1134 East Division Street, Faribault, Minn.] Conclusion: The records show that the five year Tree Swallow project was quite successful, and brought forth 406 young to the local area. We had a 61.76 percentage success as an over-all average for the entire project, with a low of 40.4 per cent in 1968 and a high of 76.9 per cent in 1971. The Tree Swallow study measured up favorably with the bluebird average of 62.95 per cent success for the same period of five years on the same trail. The Tree Swallows were found to be a serious contender for nesting space on the "Bluebird Trail."

Rutkis, E. OBSERVACIONES ACERCA DE ALGUNAS AVES Y SU PROCESO DE NIDIFICACION. [OBSERVATIONS CONCERNING SOME BIRDS AND THEIR NESTING PROCESS.] *Soc. Venez. Cienc. Nat. Bol.* 29(122/123): 432-458, illus. 1972. [From Biol. Abstr. 55(2), 1973. In Spanish with English summ.] *WR 149: 72*
[Univ. Cent. Venezuela, Caracas, Venezuela.]

Scherrer, B., and A. Deschaintre. ÉTUDE DES ÉCHANGES DE COLONIES DANS UNE POPULATION D'HIRONDELLES DE RIVAGE *(RIPARIA RIPARIA)*. [STUDY OF COLONY SHIFTING IN A BANK SWALLOW *(RIPARIA RIPARIA)* POPULATION.] *Jean-Le-Blanc* 9: 77-84. 1970. [From Auk 90(2), 1973. In French.] *WR 149: 72*

Schnitzler, H.-U. WINDKANALVERSUCHE ZUR ABHÄNGIGKEIT DER FLUGGESCHWINDIGKEIT EINER WEISSCHEITELAMMER *(ZONOTRICHIA LEUCOPHRYS)* VON DER WINDGESCHWINDIGKEIT. [WIND TUNNEL OBSERVATIONS ON THE RELATIONSHIP OF FLIGHT SPEED OF A WHITE-CROWNED SPARROW *(ZONOTRICHIA LEUCOPHRYS)* TO WIND VELOCITY.] *J. Ornithol.* 113: 21-28. 1972. [From Auk 90(2), 1973. In German with English summ.] *WR 149: 72*
A white-crowned sparrow adjusted its air speed to wind speed in a wind tunnel. With a tail wind it actually flew backward!

Short, Lester L. HABITS, RELATIONSHIPS, AND CONSERVATION OF THE OKINAWA WOODPECKER. *Wilson Bull.* 85(1): 5-20, 4 figs. + 1 pl. Mar. 1973. *WR 149: 72*
[Am. Mus. Nat. Hist., New York, N.Y.] There exists a maximum of 60 pairs of the Okinawa woodpecker *(Sapheopipo noguchii)*, and the future of these is endangered by wood cutting, forest clearing, and fires. Loss of this distinctive species and genus can be prevented only by fast action to establish one or more preserves containing pairs.--Courtesy/ Paul A. Stewart.

Simkin, G. N. [BIOLOGICAL SIGNIFICANCE OF THE BIRD SONG.] *Vestn. Mosk. Univ. Ser. 6 Biol. Pochvoved.* 27(1): 34-43. 1972. [From Biol. Abstr. 55(10), 1973. In Russian with English summ.] *WR 149: 72*
[Moscow State Univ., Moscow, USSR.]

Smith, J. Maynard, and M. G. Ridpath. WIFE SHARING IN THE TASMANIAN NATIVE HEN, *TRIBONYX MORTIERII*: A CASE OF KIN SELECTION. *Am. Nat.* 106(950): 447-452. 1972. [From Biol. Abstr. 55(3), 1973.] *WR 149: 72*
[Univ. Sussex, Sussex, England.]

Smith, Leonard M. VARIATION IN THE HORIZONTAL DISTRIBUTION OF DOWNY WOODPECKERS. *Iowa Bird Life* 43(1): 23-24. Mar. 1973. *WR 149: 72*
[William Penn Coll., Oskaloosa, Iowa.] *"Dendrocopos pubescens."*

Smith, Susan M. ROOSTING AGGREGATIONS OF BUSHTITS IN RESPONSE TO COLD TEMPERATURES. *Condor* 74(4): 478-479. Winter 1972. *WR 149: 73*
[Wellesley Coll., Wellesley, Mass.] Twenty-five bushtits *(Psaltriparus minimus)* were found roosting side by side on a branch. This close spacing of roosting birds occurred in association with sub-normal temperatures.--Courtesy/ Paul A. Stewart.

Smith, Susan M. AN AGGRESSIVE DISPLAY AND RELATED BEHAVIOR IN THE LOGGERHEAD SHRIKE. *Auk* 90(2): 287-298, 2 figs. Apr. 1973. *WR 149: 73*
[Wellesley Coll., Wellesley, Mass.] The flutter display of loggerhead shrikes *(Lanius ludovicianus)* appears to function in territorial defense.--Courtesy/ Paul A. Stewart.

Smith, Susan M. A STUDY OF PREY-ATTACK BEHAVIOUR IN YOUNG LOGGERHEAD SHRIKES, *LANIUS LUDOVICIANUS* L. *Behaviour* 44(1-2): 113-141, 1 fig. 1973. In English with French summ. *WR 149: 73*
[Wellesley Coll., Wellesley, Mass.]

Smith, Thomas S. COWBIRD PARASITISM OF WESTERN KINGBIRD AND BALTIMORE ORIOLE NESTS. *Wilson Bull.* 84(4): 497. Dec. 1972. *WR 149: 73*
[Univ. Wis., Stevens Point.] Nests of *Tyrannus verticalis* and *Icterus galbula* parasitized by *Molothrus ater.*--Courtesy/ Paul A. Stewart.

Spitzer, Gerhard. JAHRESZEITLICHE ASPEKTE DER BIOLOGIE DER BARTMEISE *(PANURUS BIARMICUS).* [SEASONAL ASPECTS OF THE BIOLOGY OF THE BEARDED TIT *(PANURUS BIARMICUS).*] *J. Ornithol.* 113(3): 241-275, illus. 1972. [From Biol. Abstr. 55 (5), 1972. In German with English summ.] *WR 149: 73*
[Univ. Vienna, Vienna, Austria.]

Stewart, Robert M. BREEDING BEHAVIOR AND LIFE HISTORY OF THE WILSON'S WARBLER. *Wilson Bull.* 85(1): 21-30, 4 figs. Mar. 1973. *WR 149: 73*
[Point Reyes Bird Observatory, P.O. Box 321, Bolinas, Calif.] Arrival dates, territory and territory defense, foraging, nests, clutch size, incubation, development of nestlings, feeding of young, development of fledglings, breeding success, and wandering of post-breeding *Wilsonia pusilla* are discussed.--Courtesy/ Paul A. Stewart.

Tast, J. GROUP NESTING AND THE BREEDING SEASON OF THE LINNET *CARDUELIS CANNABINA* IN FINLAND. *Ornis Fenn.* 47: 74-82. 1970. [From Auk 90(2), 1973.] *WR 149: 73*

Thielcke, Gerhard. WALDBAUMLAEUFER *(CERTHIA FAMILIARIS)* AHMEN ARTFREMDES SIGNAL NACH UND REAGIEREN DARAUF. [TREE CREEPERS *(CERTHIA FAMILIARIS)* LEARN THE SONG OF AN ALIEN SPECIES AND REACT TO THEM.] *J. Ornithol.* 113(3): 287-296, illus. 1972. [From Biol. Abstr. 55(5), 1973. In German with English summ.] *WR 149: 73*
[Am Schlossberg, Moeggingen, Germany.]

von Haartman, L. FURTHER OBSERVATIONS ON LATE NESTING IN CARDUELINE FINCHES. *Ornis Fenn.* 49: 15. 1972. [From Auk 90(2), 1973.] *WR 149: 73*
In addition to *Carduelis* spp., *Pyrrhula pyrrhula* is also a late breeder in Finland.

Willis, Edwin O. THE BEHAVIOR OF PLAIN-BROWN WOODCREEPERS, *DENDROCINCLA FULIGINOSA.* *Wilson Bull.* 84(4): 377-420, 12 figs. Dec. 1972. *WR 149: 73*
[Princeton Univ., Princeton, N.J.] Observations on voice, postures, hopping, flight, wandering, interspecific flocks, foraging, anting, agonistic behavior, territories, sexual behavior, and nesting are included.--Courtesy/ Paul A. Stewart.

Willis, Edwin O. THE BEHAVIOR OF OCELLATED ANTBIRDS. *Smithson. Contrib. Zool.* no. 144. ii + 56 p., 25 figs. 1973. For sale at 90¢ by Supt. Documents, GPO, Washington, D.C. *WR 149: 74*
"Phaenostictus mcleannani." Contents: Molt, Voice, Postures and movements, Wandering, Foraging, Maintenance behavior, Antipredator behavior, Agonistic behavior, Reproductive behavior, Spatial behavior, Discussion, and Literature cited.

Willson, Mary F. SEED SIZE PREFERENCE IN FINCHES. *Wilson Bull.* 84(4): 449-455, 2 figs. Dec. 1972. *WR 149: 74*
[Univ. Ill., Champaign.] Cardinals *(Richmondena cardinalis)* showed little preference for seeds dependent on size of the seed. Purple finches *(Carpodacus purpureus)* preferred thin seeds, regardless of length.--From summ. Courtesy/ Paul A. Stewart.

Winkel, Wolfgang, and Rudolf Berndt. BEOBACHTUNGEN UND EXPERIMENTE ZUR DAUER DER HUDERPERIODE BEIM TRAUERSCHNAEPPER *(FICEDULA HYPOLEUCA)*. [OBSERVATIONS AND EXPERIMENTS ON THE DURATION OF THE BROODING PERIOD OF THE PIED FLYCATCHER *(FICEDULA HYPOLEUCA)*.] *J. Ornithol.* 113(1): 9-20, illus. 1972. [From Biol. Abstr. 55(6), 1973. In German with English summ.] *WR 149: 74*
[Inst. Vogelforsch. "Vogelwarte Helgol.", Wilhelmshaven-Ruestersiel, Germany.]

Yakobi, V. E. [BIRD BEHAVIOR AND MACHINERY.] *Zh. Obshch. Biol.* 33(3): 261-273. 1972. [From Biol. Abstr. 54(11), 1972. In Russian with English summ.] *WR 149: 74*
[A. N. Severtsov Inst., Moscow, USSR.] Birds are indifferent to stationary aircraft, vehicles, etc., in case they present no immediate hazard, or may use them in nesting when there is some similarity to the specific nesting stereotype. Birds readily adapt themselves to the unusual nesting conditions, i.e. temporary mobility of the nesting substrate, powerful radar radiations, and noise. An analysis of over 1100 cases of bird collisions with aircraft reveals that these collisions occur in those periods when birds appear in the airfield which have never seen aircraft at a close distance before. It happens when young leave the nests during post-nesting and seasonal migrations. The experience of avoiding such collisions is gained through group and individual learning. The fast rate of learning ensures against aircraft collisions in birds nesting or permanently dwelling in the airfield.

Zimin, V. B. [CHARACTERISTICS OF NESTING OF THE WREN *(TROGLODYTES TROGLODYTES)* IN KARELIA.] *Zool. Zh.* 51(5): 770-772. 1972. [From Biol. Abstr. 55(3), 1973. In Russian with English summ.] *WR 149: 74*
[Inst. Biol., Acad. Sci. USSR, Petrozavodsk, USSR.]

BIRDS--MIGRATION & BANDING REPORTS

Alerstam, Thomas. NOCTURNAL BIRD MIGRATION IN SKÅNE, SWEDEN, AS RECORDED BY RADAR IN AUTUMN 1971. *Ornis Scand.* 3(2): 141-151, [3] figs. 1972. *WR 149: 74*
[Swedish Air Force, Stockholm, Sweden.]

Alerstam, Thomas, and Staffan Ulfstrand. RADAR AND FIELD OBSERVATIONS OF DIURNAL BIRD MIGRATION IN SOUTH SWEDEN, AUTUMN 1971. *Ornis Scand.* 3(2): 99-139, 12 figs. 1972. *WR 149: 74*
[Swedish Air Force, Stockholm, Sweden.]

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BIRDS--POPULATIONS & FLUCTUATIONS

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[Inst. Zool. Polish Acad. Sci., Warsaw, Poland.]

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[Mus. Nat. Hist., 2259 Puesta del Sol Rd., Santa Barbara, Calif.]

Reichholf-Riehm, Helgard. ZUR TAGESZEITLICHEN VERTEILUNG DER NAHRUNGSSUCHE DER SEIDENSCHWAENZE *(BOMBYCILLA GARULLUS)* WAEHREND DER INVASIONEN 1970/71 UND 1971/72 IN SUEDOSTBAYERN. [DAYTIME DISTRIBUTION OF FORAGING IN WAXWINGS *(BOMBYCILLA GARRULUS)* IN SOUTH-EASTERN BAVARIA DURING THE INVASION OF 1970/71 AND 1971/72.] *Anz. Ornithol. Ges. Bayern* 11(2): 190-193, illus. 1972. [From Biol. Abstr. 55(5), 1973. In German with English summ.] *WR 149: 82*

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[131 Rainbow Ave., Fort Benning, Ga.] During a two-year tour in Tananarive (Madagascar) an attempt was made to compute the density of birds living in four typical biotopes: *Aristida* and *Hyparrhenia*, marshes, *Eucalyptus* wood, and secondary Malagasy forest.

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[Oak Ridge Natl. Lab., Oak Ridge, Tenn.] Density of bird populations and species diversity increased with ecological age of the habitats.--Courtesy/ Paul A. Stewart.

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[Inst. Natl. Rech. Agron., Jouy-en-Josas, France.]

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[Percy FitzPatrick Inst., Rondebosch, South Africa.]

Yamagishi, S. A STUDY OF THE HOME RANGE AND THE TERRITORY IN MEADOW BUNTING *(EMBERIZA CIOIDES)*. 1. INTERNAL STRUCTURE OF HOME RANGE UNDER A HIGH DENSITY IN BREEDING SEASON. *Misc. Repts. Yamashina's Inst. Ornithol.* 6: 356-388. 1971. [From Auk 90(2), 1973. In English with Japanese summ.] *WR 149: 83*
Courtesy/ Paul A. Stewart.

Zwarts, L. BIRD COUNTS IN MERJA ZERGA, MOROCCO. *Ardea* 60(1/2): 120-123. 1972. [From Biol. Abstr. 55(5), 1973. In English with Dutch summ.] *WR 149: 83*
[Plompetorengracht 2, Utrecht, Netherlands.] Counts of waders and waterfowl.

BIRDS--ECONOMICS, CONTROL, MORTALITY

Bliss, L. C. IBP HIGH ARCTIC ECOSYSTEM STUDY, DEVON ISLAND. *Arctic* 25: 158-161. 1972. [From Auk 90(2), 1973.] *WR 149: 83*
Predators, chiefly foxes, destroyed 69% of snow bunting nests found in 1971 compared with 25% in 1970.

Boudreau, Gordon W. FACTORS RELATED TO BIRD DEPREDATIONS IN VINEYARDS. *Am. J. Enol. Vitic.* 23(2): 50-53. 1972. [From Biol. Abstr. 55(1), 1973.] *WR 149: 83*
[Almaden Vineyard, Paicines, Calif.] Bird depredations are a serious economic loss in some vineyards. Control depends upon the bird species, environment, season, time of day, grape variety, sugar-acid ratio, tillage, foliage cover, attractant vegetation, weather, and other factors. Present control measures are discussed and evaluated. Also covered is the need for study of bird behavior, physiology, and neurophysiology.

Gatter, W. DAS RINGELN DER SPECHTE. ["RINGING" BY WOODPECKERS.] *J. Ornithol.* 113: 207-213. 1972. [From Auk 90(2), 1973. In German with English summ.] *WR 149: 83*
The "ringing" of trees with drilled holes by European woodpeckers to provide sap, and perhaps insects attracted to the sap for food consumption by the

woodpecker. Although six spp. of woodpeckers are apparently involved, most drilling for sap is apparently performed by *Dendrocopos major*. At least 36 spp. of trees and shrubs are utilized. In some areas more than 50 percent of the trees are attacked by woodpeckers.--Courtesy/ Paul A. Stewart.

Koepcke, H.-W., and M. Koepcke. LAS AVES SILVESTRES DE IMPORTANCIA ECONÓMICA DEL PERÚ, NOS. 17, 18, 19. [THE WILD BIRDS OF ECONOMIC IMPORTANCE TO PERU NO. 17, 18, 19.] *Min. Agric. Direccion Gen. Forestal Caza Tierras* (Lima, Peru). p. 129-152. 1971. [From Auk 90(2), 1973. In Spanish.] *WR 149: 84*

Koval', N. F., and S. L. Samarskii. [CHARACTERISTICS OF *PASSER MONTANUS* L. REPRODUCTION IN FRUIT PLANTATIONS OF THE MIDDLE DNIEPER AREA.] *Vestn. Zool.* 6 (3): 62-66, illus. 1972. [From Biol. Abstr. 55(7), 1973. In Russian with English summ.] *WR 149: 84*
[Cherk. Pedagog. Inst., Cherkassy, USSR.]

Livingston, Robert B. INFLUENCE OF BIRDS, STONES AND SOIL ON THE ESTABLISHMENT OF PASTURE JUNIPER, *JUNIPERUS COMMUNIS*, AND RED CEDAR, *J. VIRGINIANA* IN NEW ENGLAND PASTURES. *Ecology* 53(6): 1141-1147, 2 figs. Autumn 1972. *WR 149: 84*
[Univ. Mass., Amherst.] During their fall migration robins *(Turdus migratorius)* feed heavily on the berries of both pasture juniper and red cedar and are effective disseminators of the seeds.--Courtesy/ Paul A. Stewart.

Taylor, Walter Kingsley, and Bruce H. Anderson. NOCTURNAL MIGRANTS KILLED AT A CENTRAL FLORIDA TV TOWER; AUTUMNS 1969-1971. *Wilson Bull.* 85(1): 42-51. Mar. 1973. *WR 149: 84*
[Fla. Technol. Univ., Orlando.] Data are presented on weights, ages, sexes, subspecies, and molts of 82 spp.--Courtesy/ Paul A. Stewart.

Willis, Edwin O. SURVIVAL RATES FOR VISITED AND UNVISITED NESTS OF BICOLORED ANTBIRDS. *Auk* 90(2): 263-267, 1 fig. Apr. 1973. *WR 149: 84*
[Princeton Univ., Princeton, N.J.] Survival rates were closely alike for visited and unvisited nests of bicolored antbirds *(Gymnopithys bicolor)*.--Courtesy/ Paul A. Stewart.

BIRDS--PARASITES & DISEASES

Austin, F. J., P. C. Bull, and M. A. Chaudry. A POXVIRUS ISOLATED FROM SILVEREYES *(ZOSTEROPS LATERALIS)* FROM LOWER HUTT, NEW ZEALAND. *J. Wildl. Dis.* 9(2): 111-114, 3 figs. Apr. 1973. *WR 149: 84*
[Med. School, Dunedin, New Zealand.]

Bennett, Gordon F., and A. G. Campbell. AVIAN HAEMOPROTEIDAE. III. DESCRIPTION OF *HAEMOPROTEUS FUSCA* SP. N. AND REDESCRIPTION OF *HAEMOPROTEUS HALCYONIS* DE MELLO, 1935, PARASITES OF THE KINGFISHER FAMILY ALCEDINIDAE. *J. Parasitol.* 59(2): 337-343, 17 figs. Apr. 1973. *WR 149: 84*
[Memorial Univ. Newfoundland, St. John's, Newfoundland, Canada.]

Holden, Preston, Richard O. Hayes, Carl J. Mitchell, D. Bruce Francy, John S. Lazuick, and Thomas B. Hughes. HOUSE SPARROWS, *PASSER DOMESTICUS* (L.), AS HOSTS OF ARBOVIRUSES IN HALE COUNTY, TEXAS. I. FIELD STUDIES, 1965-1969. *Am. J. Trop. Med. Hyg.* 22(2): 244-253. Mar. 1973. *WR 149: 84*
[Hayes: Cent. Dis. Control, P.O. Box 551, Fort Collins, Colo.]

Holden, Preston, D. Bruce Francy, Carl J. Mitchell, Richard O. Hayes, John S. Lazuick, and Thomas B. Hughes. HOUSE SPARROWS, *PASSER DOMESTICUS* (L.), AS HOSTS OF ARBOVIRUSES IN HALE COUNTY, TEXAS. II. LABORATORY STUDIES WITH WESTERN EQUINE ENCEPHALITIS VIRUS. *Am. J. Trop. Med. Hyg.* 22(2): 254-262, 2 figs. Mar. 1973. *WR 149: 84*
[Hayes: Cent. Dis. Control, P.O. Box 551, Fort Collins, Colo.]

Jackson, Jerome A. HISTOPLASMOSIS--AN OCCUPATIONAL HAZARD FOR BIRD-BANDERS? *Inland Bird Banding News* 45(2): 52-57. Mar.-Apr. 1973. *WR 149: 85*
[Miss. State Univ., Mississippi State.]

Koval', N. F. [ADAPTION OF SOME HOLLOW-NESTING BIRD SPECIES FOR THE PROTECTION OF PROGENY FROM ECTOPARASITES.] *Vestn. Zool.* 5(6): 79-81. 1971. [From Biol. Abstr. 55(10), 1973. In Russian with English summ.] *WR 149: 85*
[Cherkassy Pedagog. Inst., Cherkassy, USSR.]

Locke, Louis N., Robert B. Shillinger, and Teresa Jareed. SALMONELLOSIS IN PASSERINE BIRDS IN MARYLAND AND WEST VIRGINIA. *J. Wildl. Dis.* 9(2): 144-145. Apr. 1973. *WR 149: 85*
[Patuxent Wildl. Res. Cent., Laurel, Md.] Abstract: *Salmonella typhimurium* was responsible for a die-off of evening grosbeaks *(Hesperiphona vespertina)* at Elkins, West Virginia, and was isolated from a pine siskin *(Spinus pinus)* collected at the site of a die-off near Baltimore, Maryland.

Monga, D. P. PREVALENCE OF PATHOGENIC FUNGI IN WILD BIRDS. *Indian J. Med. Res.* 60(4): 517-519. 1972. [From Biol. Abstr. 55(5), 1973.] *WR 149: 85*
[Haryana Agric. Univ., Hissar, Punjab, India.]

Pence, Danny B. THE NASAL MITES OF BIRDS FROM LOUISIANA. VI. NEW AND ADDITIONAL RECORDS OF DERMANYSSIDS (RHINONYSSINAE) WITH DESCRIPTION OF A NEW SPECIES. *J. Parasitol.* 59(2): 359-362, 7 figs. Apr. 1973. *WR 149: 85*
[La. State Univ. Med. Cent., New Orleans.]

Pence, Danny B. THE NASAL MITES OF BIRDS FROM LOUISIANA. VII. THE EREYNETIDAE (SPELEOGNATHINAE). *J. Parasitol.* 59(2): 364-368, 7 figs. Apr. 1973. *WR 149: 85*
[La. State Univ. Med. Cent., New Orleans.]

Saikku, P., and M. Brummer-Korvenkontio. ARBOVIRUSES IN FINLAND / II. ISOLATION AND CHARACTERIZATION OF UUKUNIEMI VIRUS, A VIRUS ASSOCIATED WITH TICKS AND BIRDS. *Am. J. Trop. Med. Hyg.* 22(3): 390-399, 4 figs. May 1973. *WR 149: 85*
[Univ. Helsinki, Helsinki, Finland.]

Stabler, R. M., Nancy J. Kitzmiller, and C. E. Braun. *PLASMODIUM* IN A DARWIN'S TINAMOU FROM COLORADO. *J. Parasitol.* 59(2): 395. Apr. 1973. *WR 149: 85*
[Colo. Coll., Colorado Springs.] *"Nothura darwinii."*

GAME BIRDS--GENERAL

Johnsgard, Paul A. GROUSE AND QUAILS OF NORTH AMERICA. *Univ. Nebr.* (Lincoln). xx + 553 p., 45 figs. + 140 pls., 7.5 x 10 in. 1973. Price $25.00. *WR 149: 85*
"All of the 25 native and successfully introduced species of grouse, quails, and partridges occurring north of Guatemala are depicted, as well as the downy young of 23 of these species, many of them for the first time. The first seven chapters of Part I compare the biological traits of all the species and comment on the evolutionary and ecological significance of differences among them. Chapter 8 deals with hatching, rearing, and maintaining gamebirds in captivity, and chapter 9 with hunting, recreation, and conservation. The individual species accounts in Part II include descriptions of ranges, subspecies, criteria for identification in the hand and in the field, and a summary of the species' ecology and breeding biology. Keys to facilitate the identification of species and a listing of derivations of scientific and vernacular names are given in the appendices."

QUAIL

Case, Ronald M. BIOENERGETICS OF A COVEY OF BOBWHITES. *Wilson Bull.* 85(1): 52-59, 2 figs. Mar. 1973. *WR 149: 86*

[Univ. Nebr., Lincoln.] The roosting formation of bobwhites was generally more compact in cold than in warm temperatures; however, tight circles did occur in warm temperatures.--Courtesy/ Paul A. Stewart.

Dutton, R. L., S. G. Kenzy, and W. A. Becker. MAREK'S DISEASE IN THE JAPANESE QUAIL *(COTURNIX COTURNIX JAPONICA). Poultry Sci.* 52(1): 139-143, 2 figs. Jan. 1973. *WR 149: 86*

[DeKalb AgResearch, Inc., DeKalb, Ill.]

Fletcher, R. A. EFFECTS OF VITAMIN A DEFICIENCY ON THE PITUITARY-GONADAL AXIS OF THE CALIFORNIA QUAIL, *LOPHORTYX CALIFORNICUS. J. Exp. Zool.* 176: 25-34. 1971. [From Auk 90(1), 1973.] *WR 149: 86*

Morrison, John A., and James C. Lewis, editors. PROCEEDINGS OF THE FIRST NATIONAL BOBWHITE QUAIL SYMPOSIUM / 23-26 APRIL 1972 / OKLAHOMA STATE UNIVERSITY, STILLWATER, OKLAHOMA. *Okla. State Univ. Res. Foundation.* [viii] + 389 p. 1973. Price $5.50. *WR 149: 86*

Contents: *Bobwhite quail on shooting preserves*, Edward L. Kozicky; *The traditional southern bobwhite quail plantations*, Leon Neel; *Bobwhite quail management on state controlled wildlife areas*, Ralph J. Ellis; *Trends in management of the bobwhite quail on commercially owned forest land and national forests of the southern region*, Dale H. Arner; *The one quail per acre myth*, Forest E. Kellogg, Gary L. Doster, Edwin V. Komarek, Sr., and Ray Komarek; *Second broods in bobwhite quail*, Jack A. Stanford; *Changes of covey affiliation by bobwhite quail in Tennessee*, Noel S. Yoho and Ralph W. Dimmick; *Impact on base population density and hunter performance of stocking with pen-raised bobwhite*, Keith Sexson, Jr., and James A. Norman; *The landholder's views of the problem: The open acres program as a solution*, Henry Bellmon; *Pennsylvania's program to improve landholder-sportsmen relations*, Harvey A. Roberts; *The sportsmen's hopes for the future of hunting on private land*, Robert E. Apple; *Managing bobwhites in the cutover pinelands of south Florida*, William H. Moore; *Insects and bobwhite quail brood habitat management*, George A. Hurst; *The response of bobwhite coveys to disturbance during field trials*, Ralph W. Dimmick and Noel S. Yoho; *Habitat utilization by bobwhite quail during winter*, Noel S. Yoho and Ralph W. Dimmick; *Early quail hunting season in Tennessee: Reasons and results*, Chester A. McConnell; *Bobwhite quail population dynamics: Relationships of weather, nesting, production patterns, fall population characteristics, and harvest in Missouri quail*, Jack A. Stanford; *Body fat content of bobwhites in relation to food plantings in Kansas*, Robert J. Robel; *Relationship of postburn intervals to the incidence and success of bobwhite nesting in southwest Georgia*, Ronald C. Simpson; *The interspersion index as a technique for evaluation of bobwhite quail habitat*, William L. Baxter and Carl W. Wolfe; *Bobwhite populations and hunting on Illinois public hunting areas*, David Russel Vance and Jack A. Ellis; *Quail, land use, and weather in Illinois, 1956-70*, William R. Edwards; *The bobwhite quail of Crane Naval Ammunition Depot, Indiana--25 years of protection and plant succession*, Thomas W. Hoekstra and Charles M. Kirkpatrick; *Aspects of bobwhite quail mobility during spring through fall months*, David Urban; *A study of bobwhite quail nest initiation dates, clutch sizes, and hatch sizes in southwest Georgia*, Ronald C. Simpson; *Energetic requirements for egg-laying bobwhites*, Ronald M. Case; *Effects of DDT on steroid metabolism and energetics in bobwhite quail* (Colinus virginianus), Sheldon Lustick, Terry Voss, and Tony J. Peterle; *Diseases and parasites of the bobwhite*, Forest E. Kellogg and Gary L. Doster; *Some aspects of the dynamics of a hunted bobwhite population*, John L. Roseberry and W. D. Klimstra; *Bobwhite whistling activity and population density on two public hunting areas in Illinois*, Jack A. Ellis, Keith P. Thomas, and Paul Moore; *An evaluation of some marking techniques used on bobwhite quail*, David Urban and W. D. Klimstra; *Interrelationships between various quail population measurements*, Walter Rosene, Jr., and James M. Rosene; *Maximizing edge and coverts for quail and small game*, William M. Conlin and Robert H. Giles, Jr.; *The Oklahoma quail hunter*, Ralph J. Ellis; *Simulation studies of quail hunting success associated*

with ecological succession of planted pine stands, John D. Gavitt and Robert H. Giles, Jr.; *Seasonal changes and habitat influencing helminthiasis in bobwhite quail*, M. F. Hansen and R. J. Robel; *Population dynamics of bobwhites on an intensively managed area in southern Illinois*, W. D. Klimstra; *A model for determining least-cost quail stocking programs*, Charles H. Lobdell and Robert H. Giles, Jr.; and *Formulation of an optimum winter food-patch mix for bobwhite quail*, Charles W. Smart, Edward B. Rayburn, and Oscar T. Sanders. Appended is a partial bibliography of the bobwhite quail compiled by Steven L. Tobler and James C. Lews.

Nirmalan, Gopala Pillai. HEMATOLOGICAL STUDIES ON THE JAPANESE QUAIL. *Ph.D. thesis, Univ. Guelph.* 1972. [From Diss. Abstr. Int. B Sci. Eng. 33(11), 1973. To obtain a microfilm copy please order directly from the National Library of Canada at Ottawa.] *WR 149: 87*

PHEASANTS

Ando, Shigeru, and Akio Ogasawara. [TRACKING TELEMETRY OF A PHEASANT *(PHASIANUS COLCHICUS)*.] *Japanese J. Ecol.* 21(1/2): 32-36, illus. 1971. [From Biol. Abstr. 54(11), 1972. In Japanese with English summ.] *WR 149: 87*
[Aichi Prefect. Univ., Takadacho, Mizuho-Ku, Nagoya, Japan.]

Heinz, Gary. RESPONSES OF RING-NECKED PHEASANT CHICKS *(PHASIANUS COLCHICUS)* TO CONSPECIFIC CALLS. *Anim. Behav.* 21(1): 1-9, 2 figs. Feb. 1973. *WR 149: 87*
[Patuxent Wildl. Res. Cent., Laurel, Md.] Abstract: The locomotor responses of pheasant chicks to conspecific calls and the vocalizations of the chicks relating to their locomotor responses were measured in a test apparatus permitting approach or retreat movements. The brood-gathering call and the content call elicited strong approach from chicks. The alarm call and the squeak call inhibited locomotion in chicks. The hiss call, brood-caution call, fright call and flock call do not greatly affect the locomotion of subjects. The flock call appears to be primarily a care-soliciting call. Conspecific calls appear to be important to the survival of young pheasant chicks in the wild.

Montag, David G., and Robert B. Dahlgren. TRANSFERRIN POLYMORPHISMS IN THE RING-NECKED PHEASANT. *Auk* 90(2): 318-323, 1 fig. Apr. 1973. *WR 149: 87*
[S. Dak. State Univ., Brookings.] *"Phasianus colchicus."*--Courtesy/ Paul A. Stewart.

Russell, Kenneth Robert. ARTIFICIAL STRUCTURES AND MICROCLIMATE IN RELATION TO PHEASANT NESTING. *Ph.D. thesis, Iowa State Univ.* 109 p. 1972. [From Diss. Abstr. Int. B Sci. Eng. 33(10), 1972.] *WR 149: 87*
"Phasianus colchicus."

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[Pembroke Coll., Cambridge, England.] *"Cygnus cygnus."*

Hewson, Raymond. CHANGES IN A WINTER HERD OF WHOOPER SWANS AT A BANFF LOCH. *Bird Study* 20(1): 41-49, 4 figs. Mar. 1973. *WR 149: 93*
[Dep. Agric. & Fisheries, Blackhall, Banchory, Kincardineshire, Scotland.] Summary: Whooper swans on migration were counted weekly at Loch Park, Banffshire, northeast Scotland from 1955 to 1967. Up to 200 gathered each

autumn, increasing from 1955 to 1958 and decreasing until by 1968 few swans appeared. Changes in numbers were associated with differences in migratory behaviour. Swans stayed longer when numbers were high. Brood size declined significantly over the period 1953-1967. A possible explanation of the decline in the wintering population is that the habitat is no longer suitable owing to the growth of trees (8 m. high) along the banks.

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[Dzial Przyrody Muz., Czestochowa, Poland.]

Prevett, J. P., and C. D. MacInnes. THE NUMBER OF ROSS' GEESE IN CENTRAL NORTH AMERICA. *Condor* 74(4): 431-438, 2 figs. Winter 1972. *WR 149: 94*
[Univ. Western Ontario, London, Ontario, Canada.] The number of Ross' geese occurring in central North America increased dramatically since 1960.--Courtesy/ Paul A. Stewart.

Prevett, J. P., and C. D. MacInnes. OBSERVATIONS OF WILD HYBRIDS BETWEEN CANADA AND BLUE GEESE. *Condor* 75(1): 124-125. Spring 1973. *WR 149: 94*
[Univ. Western Ontario, London, Ontario, Canada.] Descriptions and notes on frequency of occurrence of hybrids between *Branta canadensis* and *Anser caerulescens*.--Courtesy/ Paul A. Stewart.

Prevett, J. P., and L. S. Prevett. EGG RETRIEVAL BY BLUE GEESE. *Auk* 90(1): 202-204, 1 fig. Jan. 1973. *WR 149: 94*
[Univ. Western Ontario, London, Ontario, Canada.] Contrary to reports of earlier workers, blue geese *(Anser caerulescens)* were found to retrieve eggs outside of their nests.--Courtesy/ Paul A. Stewart.

Sileo, L., R. N. Jones, and R. C. Hatch. THE EFFECT OF INGESTED LEAD SHOT ON THE ELECTROCARDIOGRAM OF CANADA GEESE. *Avian Dis.* 17(2): 308-313, 3 figs. Apr.-June 1973. *WR 149: 94*
[Univ. Guelph, Guelph, Ontario, Canada.] Summary: Myocardial degeneration and necrosis is a common finding in lead-poisoned waterfowl. An attempt was made to detect this damage electrocardiographically. The lead-II electrocardiograms of six Canada geese were recorded daily for 2 weeks before five of the birds were dosed with lead shot via stomach tube. The ECG's were recorded daily until the poisoned birds died. Myocardial necrosis was demonstrated histologically in three of the geese. The ECG's of two of these geese contained abnormalities consisting of increased R-wave amplitude, changes in ST-segment elevation and shape, and T-wave inversion.

Smith, Ian D., and Donald A. Blood. NATIVE SWANS WINTERING ON VANCOUVER ISLAND OVER THE PERIOD 1969-71. *Canadian Field Nat.* 86(3): 213-216, illus. 1972. [From Biol. Abstr. 55(8), 1973.] *WR 149: 94*
[British Columbia Wildl. Branch, Nanaimo, British Columbia, Canada.]

Von Wicht, Udo. ERSTMALS KOLONIEARTIGES BRUETEN DES HOECKERSCHWANS *(CYGNUS OLOR)* AM BODENSEE. [FOR THE FIRST TIME COLONY-LIKE BREEDING OF THE MUTE SWAN *(CYGNUS OLOR)* AT LAKE CONSTANCE.] *Ans. Ornithol. Ges. Bayern* 11(2): 164-167, illus. 1972. [From Biol. Abstr. 55(5), 1973. In German with English summ.] *WR 149: 94*
[Im Bohl 13 a, Wangen, Germany.]

Young, John G. DISTRIBUTION, STATUS AND MOVEMENTS OF FERAL GREYLAG GEESE IN SOUTHWEST SCOTLAND. *Scottish Birds* 7(4): 170-182, 2 figs. + 2 pls. Winter 1972. *WR 149: 94*

Arnold, K. A. RECAPTURES AND RECOVERIES OF COMMON SNIPE WINTERING IN TEXAS. *Western Bird Bander* 47: 17-19. 1972. [From Auk 90(1), 1973.] *WR 149: 95*

Baker, Myron Charles. STOCHASTIC PROPERTIES OF THE FORAGING BEHAVIOR OF SIX SPECIES OF MIGRATORY SHOREBIRDS. *Behaviour* 45(3-4): 242-270, 10 figs. 1973. In English with German summ. *WR 149: 95*
[Rockefeller Univ., New York, N.Y.] A statistical description of the temporal and sequential organization of foraging behavior in six species of migrant shorebirds is presented. Intervals between successive predation attempts produce distributions approximating gamma or exponential probability laws. These distributions undergo seasonal changes in the direction of more shorter intervals in winter.--From summ.

Beretak, P., and A. Keve. DIE RAUBSEESCHWALBE, *HYDROPROGNE CASPIA* (PALLAS), IN UNGARN (1953-1969) (AVES, LARIDAE). [THE PREDATORY SEA-SWALLOW *HYDROPROGNE CASPIA* (PALLAS), IN HUNGARY (1953-1969) (AVES, LARIDAE).] *Zool. Abh.* (Dresden) 30(18): 227-242. 1971. [From Biol. Abstr. 54(11), 1972. In German.] *WR 149: 95*
[Szechenyi ter 12, Szeged, Hungary.]

Berry, H. H. FLAMINGO BREEDING ON THE ETOSHA PAN, SOUTH WEST AFRICA, DURING 1971. *Madoqua* Ser. I, no. 5. p. 5-31, 6 figs., 8 pls. 1972. *WR 149: 95*
[Div. Nat. Conserv. & Tourism, Windhoek, South West Africa.] *"Phoenicopterus ruber* and *Phoeniconaias minor."*

Browne, Micou M., and William Post. BLACK RAILS HIT A TELEVISION TOWER AT RALEIGH, NORTH CAROLINA. *Wilson Bull.* 84(4): 491-492. Dec. 1972. *WR 149: 95*
[N.C. State Univ., Raleigh.] *"Laterallus jamaicensis."*--Courtesy/ Paul A. Stewart.

Burtt, Edward H., Jr. EGGSHELL REMOVAL IN THE SPOTTED SANDPIPER. *Wilson Bull.* 84(4): 492. Dec. 1972. *WR 149: 95*
[Univ. Wis., Madison.] A spotted sandpiper *(Actitis macularia)* removed an eggshell from its nest soon after the young hatched, depositing it about 40 meters from the nest.--Courtesy/ Paul A. Stewart.

Campbell, R. Wayne. THE AMERICAN AVOCET *(RECURVIROSTRA AMERICANA)* IN BRITISH COLUMBIA (1908-70). *Syesis* 5: 173-178, illus. 1972. [From Biol. Abstr. 55(9), 1973.] *WR 149: 95*
[Univ. British Columbia, Vancouver, British Columbia, Canada.]

Campbell, R. Wayne. THE GREEN HERON IN BRITISH COLUMBIA. *Syesis* 5: 235-247, illus. 1972. [From Biol. Abstr. 55(9), 1973.] *WR 149: 95*
[Univ. British Columbia, Vancouver, British Columbia, Canada.]

De Kroon, G. H. J. HET VOORKOMEN VAN DE WATERRAL *RALLUS AQUATICUS* IN DE WINTER IN EEN ZOETWATERGETIJDENGEBIED. [THE OCCURRENCE OF THE WATERRAIL *RALLUS AQUATICUS* DURING THE WINTER.] *Limosa* 45(1/2): 42-48, illus. 1972. [From Biol. Abstr. 55(5), 1973. In Dutch with English summ.] *WR 149: 95*
[Havendijk 56, Gorinchem, Netherlands.]

Drobovtsev, V. I. [UNUSUAL NESTING OF THE BALD COOT *(FULICA ATRA* L.) IN NORTHERN KAZAKHSTAN.] *Biol. Nauk.* 14(10): 19-20. 1971. [From Biol. Abstr. 55 (2), 1973. In Russian.] *WR 149: 95*

Dutton, T. P. FIRST NESTING RECORD OF OPENBILL STORK FOR THE REPUBLIC OF SOUTH AFRICA. *Lammergeyer* 17. p. 36-39, 2 figs. Dec. 1972. *WR 149: 95*
[Reparticão da Fauna, C.P. 255, Lourenco Marques, Mocambique.] Summary: The first nesting record of Openbill storks *Anastomus lamelligerus* in the Republic of South Africa and some facets of their biology is presented. A brief description of the habitat and major climatic conditions is also recorded.

Dybbro, Tommy. POPULATION STUDIES ON THE WHITE STORK *CICONIA CICONIA* IN DENMARK. *Ornis Scand.* 3(2): 91-97, 3 figs. 1972. *WR 149: 96*
[Zool. Mus., Copenhagen, Denmark.] The Danish population of the white stork has decreased from 222 pairs to 54 pairs over the period 1952-71. It may be calculated that the white stork will disappear as a breeding bird in Denmark about the year 2000.--From abstr.

Flegg, J. J. M., and David E. Glue. A WATER RAIL STUDY. *Bird Study* 20(1): 69-79, 6 figs. Mar. 1973. *WR 149: 96*
[British Trust Ornithol., Tring, Hertfordshire, England.] Migration, mortality, report of causes of death, nest records, weight, and measurements of *Rallus aquaticus*.

Fogarty, Michael J., and Willa Mae Hetrick. SUMMER FOODS OF CATTLE EGRETS IN NORTH CENTRAL FLORIDA. *Auk* 90(2): 268-280. Apr. 1973. *WR 149: 96*
[Fla. Game & Fresh Water Fish Comm., Gainesville.] Invertebrates comprised 93.3% of the food by volume. Orthoptera were found in 96.8% of the stomachs and accounted for 80.5% of the total volume.--Courtesy/ Paul A. Stewart.

Forsythe, Dennis M. GROWTH AND DEVELOPMENT OF LONG-BILLED CURLEW CHICKS. *Auk* 90(2): 435-438. Apr. 1973. *WR 149: 96*
[Clemson Univ., Clemson, S.C.] *"Numenius americanus."*--Courtesy/ Paul A. Stewart.

Glutz Von Blotzheim, Urs N. ZUR MAUSER VON *CHARADRIUS HIATICULA, DUBIUS* UND *ALEXANDRINUS*. [ON THE MOULT OF *CHARADRIUS HIATICULA, DUBIUS* AND *ALEXANDRINUS*.] *J. Ornithol.* 113(3): 323-333, illus. 1972. [From Biol. Abstr. 55(5), 1973. In German with English summ.] *WR 149: 96*
["Eichhoelzli," Sempach, Switzerland.]

Graul, Walter D. POSSIBLE FUNCTIONS OF HEAD AND BREAST MARKINGS IN CHARADRIINAE. *Wilson Bull.* 85(1): 60-70, 2 figs. Mar. 1973. *WR 149: 96*
[Univ. Minn., Minneapolis.] It is proposed that the primitive *Charadrius* stock had breast bands and nested on shingle and that as this genus radiated the markings took on social signal functions and were modified by new selective pressures in new habitats.--From summ. Courtesy/ Paul A. Stewart.

Hoelzinger, Jochen. *LEPTOMITUS LACTEUS* ALS NAHRUNG DES BLAESSHUHNS *(FULICA ATRA)* AM OEPFINGEN DONAUSTRAUSEE. [*LEPTOMITUS LACTEUS* (PHYCOMYCETES, OOMYCETALES, SAPROLEGNIACEAE) AS FOOD FOR THE COOT *(FULICA ATRA)* AT THE ARTIFICIAL POND OF THE DANUBE NEAR OEPFINGEN.] *Anz. Ornithol. Ges. Bayern* 11(2): 168-175, illus. 1972. [From Biol. Abstr. 55(5), 1973. In German with English summ.] *WR 149: 96*
[Silcherweg 22, Oberelchingen, Germany.]

Juarez L., Carlos, and Robert W. Dickerman. NESTLING DEVELOPMENT OF BOAT-BILLED HERONS *(COCHLEARIUS COCHLEARIUS)* AT SAN BLAS, NAYARIT, MEXICO. *Wilson Bull.* 84(4): 456-468, 10 figs. Dec. 1972. *WR 149: 96*
[Dickerman: Cornell Univ. Med. Coll., New York, N.Y.] Courtesy/ Paul A. Stewart.

Kahl, M. P. A REVISION OF THE FAMILY CICONIIDAE (AVES). *J. Zool. Proc. Zool. Soc. Lond.* 167(4): 451-461, illus. 1972. [From Biol. Abstr. 55(6), 1973.] *WR 149: 96*
[661 Rudder Rd., Naples, Fla.]

Kahl, M. P. COMPARATIVE ETHOLOGY OF THE CICONIIDAE: II. THE ADJUTANT STORKS, *LEPTOPTILOS DUBIUS* (GMELIN) AND *L. JAVANICUS* (HORSFIELD). *Ardea* 60(1/2): 97-111, illus. 1972. [From Biol. Abstr. 55(5), 1973. In English with Dutch summ.] *WR 149: 96*
[661 Rudder Rd., Naples, Fla.]

Kahl, M. P. COMPARATIVE ETHOLOGY OF THE CICONIIDAE: 4. THE "TYPICAL" STORKS (GENERA *CICONIA, SPHENORHYNCHUS, DISSOURA,* AND *EUXENURA*). *Z. Tierpsychol.* 30 (3): 225-252, illus. 1972. [From Biol. Abstr. 54(11), 1972. In English with German summ.] *WR 149: 97*
[661 Rudder Rd., Naples, Fla.]

Kahl, M. P. COMPARATIVE ETHOLOGY OF THE CICONIIDAE: 5. THE OPENBILL STORKS (GENUS *ANASTOMUS*). *J. Ornithol.* 113(2): 121-137, illus. 1972. [From Biol. Abstr. 55(9), 1973. In English with German summ.] *WR 149: 97*
[661 Rudder Rd., Naples, Fla.]

Kahl, M. P. COMPARATIVE ETHOLOGY OF THE CICONIDAE, PART 6. THE BLACKNECKED, SADDLEBILL, AND JABIRU STORKS (GENERA *XENORHYNCHUS, EPHIPPIORHYNCHUS,* AND *JABIRU*). *Condor* 75(1): 17-27, 6 figs. Spring 1973. *WR 149: 97*
[661 Rudder Rd., Naples, Fla.] Describes behavior observed in wild populations of black-necked storks *(Xenorhynchus asiaticus)* in Asia, the saddlebill stork *(Ephippiorhynchus senegalensis)* in Africa, and the jabiru stork *(Jabiru mycteria)* in South America.--Courtesy/ Paul A. Stewart.

Keller, Charles E. SHOREBIRD MIGRATION AT THE INDIANAPOLIS SEWAGE DISPOSAL PLANT. *Ind. Audubon Quart.* 50(4): 124-135, 4 figs. Nov. 1972. *WR 149: 97*
Shorebird migration was studied at the Indianapolis Sewage disposal plant from April 1954-October 1969. A total of 28 spp. was observed including 25 during the northbound flight and 28 during the southbound flight. All species were ranked according to their abundance and compared with data representing other major flyways in the United States.--From summ.

Kinsella, John M., L. T. Hon, and Porter B. Reed, Jr. A COMPARISON OF THE HELMINTH PARASITES OF THE COMMON GALLINULE *(GALLINULA CHLOROPUS CACHINNANS)* AND THE PURPLE GALLINULE *(PORPHYRULA MARTINICA)* IN FLORIDA. *Am. Midl. Nat.* 89(2): 467-473. Apr. 1973. *WR 149: 97*
[Archbold Biol. Sta., Rt. 2, Box 380, Lake Placid, Fla.]

Krajewski, Longin. BADANIA NAD POKARMEM ŁYSEK *(FULICA ATRA* L.) ZASIEDLAJACYCH STAWY MILICKIE W WOJEWÓDZTWIE WROCŁAWSKIM. [INVESTIGATIONS ON THE FEED OF BALD-COOTS *(FULICA ATRA* L.) INHABITING THE MILICZ PONDS IN THE VOIVODESHIP WROCŁAW.] *Ochrona Przyrody* 37. p. 313-326. 1972. In Polish with English summ. *WR 149: 97*
[Wroclaw Univ., Wroclaw, Poland.]

Kraus, Manfred, and Werner Krauss. ZUM VORKOMMEN DER BEKASSINE *(GALLINAGO GALLINAGO)* IM REGNITZBECKEN MIT ANGABEN ZUR BRUTVERBREITUNG IN NORDBAYERN. [ON THE OCCURRENCE OF THE SNIPE *(GALLINAGO GALLINAGO)* IN THE REGNITZ BASIN WITH NOTES ON THE BREEDING DISTRIBUTION IN NORTHERN BAVARIA.] *Anz. Ornithol. Ges. Bayern* 11 (2): 129-138, illus. 1972. [From Biol. Abstr. 55(5), 1973. In German with English summ.] *WR 149: 97*
[Am Tiergarten 28, Nuernberg, Germany.]

Kumerloeve, H. ZUM BRUTVORKOMMEN DES SICHLERS, *PLEGADIS FALCINELLUS* (L.) IM VORDEREN ORIENT. [OCCURRENCE OF BREEDING BIRDS OF THE GLOSSY IBIS, *PLEGADIS FALCINELLUS* (L.) IN THE MIDDLE EAST.] *Zool. Abh.* (Dresden) 30(19): 243-246. 1971. [From Biol. Abstr. 54(11), 1972. In German.] *WR 149: 97*

Kushlan, James A. BILL-VIBRATING: A PREY-ATTRACTING BEHAVIOR OF THE SNOWY EGRET, *LEUCOPHOYX THULA*. *Am. Midl. Nat.* 89(2): 509-512. Apr. 1973. *WR 149: 97*
[Univ. Miami, Coral Gables, Fla.] Abstract: The snowy egret *(Leucophoyx thula)* attracts fish by rapidly opening and closing its bill with the tip submerged in the water. In comparison with four other types of feeding behavior, bill-vibrating was as successful as the more energetic types. In southern Florida this behavior is apparently used to attract the mosquito fish *(Gambusia affinis)*. Observations of bill-vibrating behavior suggest that imitation of other birds and individual variation in ability in part determine the use of a particular feeding technique.

Leposky, George. AT HOME ON THE RANGE. *Fla. Wildl.* 27(1): 4-6, illus. June 1973. *WR 149: 98*
Popular account of the dispersal of the cattle egret *Bubulcus ibis*.

Macko, J. K. THE HELMINTHS OF *PORZANA PORZANA* IN SLOVAKIA. *Helminthologia* (Bratislava) 10: 245-253, illus. 1969 (1971). [From Biol. Abstr. 55(7), 1973. In English with Russian and German summ.] *WR 149: 98*
[Helminthol. Inst., Slovak Acad. Sci., Kosice, Czechoslovakia.]

Macko, J. K. [ON THE HELMINTH FAUNA OF *PORZANA PARVA* IN SLOVAKIA (CSSR).] *Helminthologia* (Bratislava) 10: 255-258. 1969 (1971). [From Biol. Abstr. 55 (7), 1973. In Russian with German and English summ.] *WR 149: 98*
[Helminthol. Inst., Slovak Acad. Sci., Kosice, Czechoslovakia.]

Macko, J. K. DIE HELMINTHEN FAUNA DER FAMILIE RALLIDAE IN DER SLOWAKEI. [THE HELMINTH FAUNA OF THE FAMILY RALLIDAE IN SLOVAKIA.] *Helminthologia* (Bratislava) 10: 259-276. 1969 (1971). [From Biol. Abstr. 55(7), 1973. In German with Russian and English summ.] *WR 149: 98*
[Helminthol. Inst., Slovak Acad. Sci., Kosice, Czechoslovakia.]

Maclean, G. L. A REVIEW OF THE BIOLOGY OF THE AUSTRALIAN DESERT WADERS, *STILTIA* AND *PELTOHYAS*. *Emu* 73(2): 61-70, 3 figs. Apr. 1973. In English with German summ. *WR 149: 98*
[Univ. Natal, Pietermaritzburg, South Africa.]

Mangold, Robert E. NOISY PHANTOM OF THE SALT MARSH / THE CLAPPER RAIL. *N.J. Outdoors* 23(12): 3-10, illus. June 1973. *WR 149: 98*
Information on egg incubation, double clutching, predator losses, populations, banding, sex and age of New Jersey clapper rails.

Mayfield, Harold F. BLACK-BELLIED PLOVER INCUBATION AND HATCHING. *Wilson Bull.* 85(1): 82-85, 1 fig. Mar. 1973. *WR 149: 98*
[Waterville, Ohio.] *"Squatarola squatarola."*--Courtesy/ Paul A. Stewart.

Moriearty, P. L., D. E. Pomeroy, and B. Wanjala. PARASITES OF THE MARABOU STORK *(LEPTOPTILOS CRUMENIFERUS* (LESSON)) IN QUEEN ELIZABETH NATIONAL PARK, UGANDA. *E. Afr. Wildl. J.* 10(4): 311-314. Dec. 1972. *WR 149: 98*
[Univ. Chicago, Chicago, Ill.]

Mulder, T. DE GRUTTO, IN NEDERLAND., *(LIMOSA LIMOSA* (L.)). [THE BLACK-TAILED GODWIT *(LIMOSA LIMOSA* (L.)) IN THE NETHERLANDS.] *Wet. Meded. K.N.N.V. (K. Ned. Natuurhist. Ver.)* 90. p. 3-52, illus. 1972. [From Biol. Abstr. 55(2), 1973. In Dutch with English summ.] *WR 149: 98*

Navas, J. R. DESARROLLO Y SEQUENCIAS DE PLUMAJES EN *"FULICA ARMILLATA"* VIEILLOT (AVES, RALLIDAE). [DEVELOPMENT AND SEQUENCES OF PLUMAGES IN THE RED-GARTERED COOT *(FULICA ARMILLATA)* (AVES, RALLIDAE).] *Rev. Mus. Arg. Cien. Nat. "Bernardino Rivadavia"* 10. p. 65-85. 1970. [From Auk 90(1), 1973. In Spanish with English summ.] *WR 149: 98*

Nieboer, E. PRELIMINARY NOTES ON THE PRIMARY MOULT IN DUNLINS *CALIDRIS ALPINA*. *Ardea* 60(1/2): 112-119, illus. 1972. [From Biol. Abstr. 55(5), 1973. In English with Dutch summ.] *WR 149: 98*
[Free Univ., Amsterdam, Netherlands.]

Owen, Ray B., Jr., and William B. Krohn. MOLT PATTERNS AND WEIGHT CHANGES OF THE AMERICAN WOODCOCK. *Wilson Bull.* 85(1): 31-41, 4 figs. Mar. 1973. *WR 149: 98*
[Univ. Maine, Orono.] Adult American woodcocks *(Philohela minor)* lost weight in August during peak molt and were not physiologically prepared for migration until mid-October. Weights of adult males also showed the spring to be an important period of stress.--Courtesy/ Paul A. Stewart.

Page, Gary. SHOREBIRD CENSUSES ON BOLINAS LAGOON. *Point Reyes Bird Obs. Newsl.* no. 25. p. 1-3, illus. Apr. 1973. *WR 149: 99*
Results of censuses taken "every five days for an entire year" are summarized.

Pence, Danny B., and Albert O. Bush. *POLYCYCLORCHIS EUDOCIMI* GEN. ET SP. N. (TREMATODA: CYCLOCOELIDAE) FROM THE TRACHEA OF THE WHITE IBIS, *EUDOCIMUS ALBUS* L. *J. Parasitol.* 59(1): 85-89, 5 figs. Feb. 1973. *WR 149: 99*
[La. State Univ. Med. Cent., New Orleans.]

Pienkowski, Michael W., and C. D. T. Minton. WING LENGTH CHANGES OF THE KNOT WITH AGE AND TIME SINCE MOULT. *Bird Study* 20(1): 63-68, 3 figs. Mar. 1973. *WR 149: 99*
[Univ. East Anglia, Norwich, Norfolk, England.] Adult knots' wing lengths decrease by a mean of 0.68 mm. per month (7-8 mm. per year, which is 4%). Similar decreases have been calculated for juvenile knots and for adult and juvenile sanderlings (2.5% and 5% respectively for the last two). This decrease appears to be linear but it is not clear whether it is due entirely to abrasion.--From summ.

Pratt, Helen M. NESTING SUCCESS OF COMMON EGRETS AND GREAT BLUE HERONS IN THE SAN FRANCISCO BAY REGION. *Condor* 74(4): 447-453, 1 fig. Winter 1972. *WR 149: 99*
[Point Reyes Bird Observatory, Mesa Rd., Bolinas, Calif.] The number of young raised per breeding pair of common egrets *(Casmerodius albus)* declined from 1.4 in 1967 to 1.0 in 1969 and 1970, with egg breakage the chief cause. There was variation in the number of young per breeding pair of great blue herons *(Ardea herodiae)* but no consistent trend was evident.--Courtesy/ Paul A. Stewart.

Radkiewica, Jozef. INWNETARYZACJA GNIAZD BOCIANA BIALEGO, *CICONIA CICONIA* (L.) W POWIECIE SLUBICE (WOJ. ZIELONA GORA). [AN INVENTORY OF NESTS OF THE WHITE STORK, *CICONIA CICONIA* (L.) IN THE DISTRICT OF SLUBICE (VOIVODESHIP OF ZIELONA GORA).] *Acta Ornithol.* (Warsaw) 13(1): 1-14. 1972. [From Biol. Abstr. 55(3), 1973. In Polish with Russian and English summ.] *WR 149: 99*

Reichholf, Josef. DER DURCHZUG DER BEKASSINE *(GALLINAGO GALLINAGO)* AN DEN STAUSEEN AM UNTEREN INN: VERSUCH EINER OEKOLOGISCHEN ANALYSE. [THE MIGRATION OF THE SNIPE *(GALLINAGO GALLINAGO)* AT THE RESERVOIRS OF THE LOWER INN RIVER: ATTEMPT AT AN ECOLOGICAL ANALYSIS.] *Anz. Ornithol. Ges. Bayern* 11(2): 139-163, illus. 1972. [From Biol. Abstr. 55(5), 1973. In German with English summ.] *WR 149: 99*
[Aigen/Inn, Austria.]

Ryder, R. A., and G. G. W. Robinson. RESULTS FROM BANDING WATERBIRDS IN COLORADO AND UTAH. *Western Bird Bander* 47: 10-12. 1972. [From Auk 90(1), 1973.] *WR 149: 99*
Particularly interesting for winter recoveries in Mexico of white pelicans, snowy egrets, and white-faced ibis.

Sergienko, M. I. [PARASITIC WORMS OF LARI FROM THE UPPER DNIESTER BASIN.] *Vestn. Zool.* 5(6): 43-48, illus. 1971. [From Biol. Abstr. 55(7), 1973. In Russian with English summ.] *WR 149: 99*

Seton, D. H. C. OBSERVATIONS ON BREEDING OF THE GREAT-BILLED HERON IN NORTHERN QUEENSLAND. *Emu* 73(1): 9-11, 1 fig. Jan. 1973. *WR 149: 99*
[Queensland Dep. Primary Ind., P.O. Box 983, Ingham, Queensland, Australia.] *"Ardea sumatrana."*

Siegfried, W. R. POPULATION DYNAMICS OF THE CATTLE EGRET. *Zool. Afr.* 6(2): 289-292. 1971. [From Biol. Abstr. 55(3), 1973.] *WR 149: 99*
[Percy FitzPatrick Inst. Afr. Ornithol., Rondebosch, South Africa.]

Spinks, Russell A. THE AMERICAN WOODCOCK. *N.J. Outdoors* 23(10-11): 3-7, illus. Apr.-May 1972. *WR 149: 100*
Description, range, movements, reproduction, mortality factors, hunting tips and management are the major topics of discussion.

Vestjens, W. J. M. FEEDING OF WHITE IBIS ON FRESHWATER MUSSELS. *Emu* 73(2): 71-72. Apr. 1973. *WR 149: 100*
[CSIRO, P.O. Box 84, Lyneham, Australia.] *"Threskiornis molucca."*

Wilson, John. WADER POPULATIONS OF MORECAMBE BAY, LANCASHIRE. *Bird Study* 20 (1): 9-23, 1 fig. Mar. 1973. *WR 149: 100*
[Myers Farm, Silverdale, Carnforth, Lancashire, England.]

Zijlstra, L. WAARNEMINGEN BIJ EEN BROEDGEVAL VAN DE OEVERLOPER *ACTITIS HYPOLEUCOS* LANGS DE IJSSEL. [OBSERVATIONS AT A BREEDING-RECORD OF THE COMMON SANDPIPER *ACTITIS HYPOLEUCOS* NEAR THE RIVER IJSSEL.] *Limosa* 45(1/2): 30-35, illus. 1972. [From Biol. Abstr. 55(5), 1973. In Dutch with English summ.] *WR 149: 100*
[Vegtestraat 143, Zutphen, Netherlands.]

SEABIRDS & THEIR ALLIES

Ainley, D. G., S. Morrell, and T. J. Lewis. COLONY ATTENDANCE OF COMMON MURRES ON THE FARALLONES. *Point Reyes Bird Obs. Newsl.* no. 5. p. 6-8, [1 fig.]. Apr. 1973. *WR 149: 100*
"Uria aalge."

Bailey, R. S., and W. R. P. Bourne. NOTES ON SEA-BIRDS: 36. COUNTING BIRDS AT SEA. *Ardea* 60(1/2): 124-127. 1972. [From Biol. Abstr. 55(5), 1973.] *WR 149: 100*
[Zool. Dep., Tillydrome Ave., Aberdeen, Scotland.] The problems encountered in counting birds at sea and the need for uniformity of counting methods are discussed.

Bakke, Tor A. STUDIES OF THE HELMINTH FAUNA OF NORWAY XXII: THE COMMON GULL, *LARUS CANUS* L., AS FINAL HOST FOR *DIGENEA* (PLATYHELMINTHES): I. THE ECOLOGY OF THE COMMON GULL AND THE INFECTION IN RELATION TO SEASON AND THE GULLS' HABITAT, TOGETHER WITH THE DISTRIBUTION OF THE PARASITES IN THE INTESTINE. *Norwegian J. Zool.* 20(3): 165-168, illus. 1972. [From Biol. Abstr. 55(7), 1973.] *WR 149: 100*
[Zool. Mus., Oslo, Norway.]

Bakke, Tor A. STUDIES OF THE HELMINTH FAUNA OF NORWAY XXIII: THE COMMON GULL, *LARUS CANUS* L., AS FINAL HOST FOR *DIGENEA* (PLATYHELMINTHES): II. THE RELATIONSHIP BETWEEN INFECTION AND WEIGHT, SEX AND AGE OF THE COMMON GULL. *Norwegian J. Zool.* 20(3): 189-204, illus. 1972. [From Biol. Abstr. 55(7), 1973.] *WR 149: 100*
[Zool. Mus., Oslo, Norway.]

Bartonek, James C., and Daniel D. Gibson. SUMMER DISTRIBUTION OF PELAGIC BIRDS IN BRISTOL BAY, ALASKA. *Condor* 74(4): 416-422, 3 figs. Winter 1972. *WR 149: 100*
[Northern Prairie Wildl. Res. Cent., Jamestown, N. Dak.] With data on 32 spp. --Courtesy/ Paul A. Stewart.

Beck, J. R., and D. W. Brown. THE BIOLOGY OF WILSON'S STORM PETREL, *OCEANITES OCEANICUS* (KUHL), AT SIGNY ISLAND, SOUTH ORKNEY ISLANDS. *British Antarct. Surv. Sci. Rep.* 69. p. 3-54, illus. 1972. [From Biol. Abstr. 55(7), 1973.] *WR 149: 100*

Brook, D., and J. R. Beck. ANTARCTIC PETRELS, SNOW PETRELS AND SOUTH POLAR SKUAS BREEDING IN THE THERON MOUNTAINS. *British Antarct. Surv. Bull.* 27. p. 131-137, illus. 1972. [From Biol. Abstr. 55(6), 1973.] *WR 149: 101*

Budd, G. M. STATUS OF THE HEARD ISLAND KING PENGUINS IN 1971. *Auk* 90(1): 195-196. Jan. 1973. *WR 149: 101*
[Univ. Sydney, Sydney, New South Wales, Australia.] *Aptenodytes patagonica* populations increased from 6 adults in 1963 to 67 in 1971.--Courtesy/ Paul A. Stewart.

Burger, Joanna. EGG SIZE AND SHELL THICKNESS IN THE FRANKLIN'S GULL. *Auk* 90(2): 423-426. Apr. 1973. *WR 149: 101*
[Univ. Minn., Minneapolis.] Thickness of eggshells of Franklin's gulls *(Larus pipixcan)* in Minnesota has not changed during the past 80 years.--Courtesy/ Paul A. Stewart.

Campbell, R. Wayne, and Robert G. Fottit. THE FRANKLIN'S GULL IN BRITISH COLUMBIA. *Syesis* 5: 99-106, illus. 1972. [From Biol. Abstr. 55(9), 1973.] *WR 149: 101*
[Univ. British Columbia, Vancouver, British Columbia, Canada.]

Cody, Martin L. COEXISTENCE, COEVOLUTION AND CONVERGENT EVOLUTION IN SEABIRD COMMUNITIES. *Ecology* 54(1): 31-44, 3 figs. Winter 1973. *WR 149: 101*
[Univ. Calif., Los Angeles.] Abstract: Ecological isolating mechanisms based on differences in size or breeding season operate in many groups of related sympatric seabirds, but not in the alcid species (Aves: Fam. Alcidae) found together in Washington State. At least three of the six coexisting species have similar diets, and all six breed at the same time of year. They differ, however, in their foraging zones at sea and appear to have reduced interspecific competition by this means. Diverse aspects of the breeding biology, behavior, morphology and ecology of these alcids can be explained by reference to two sets of selective factors--interspecific competition for food and predation upon the eggs, chicks and adults. Species that fish inshore guard their chicks in exposed cliff sites grouped into ubiquitous but small colonies. They carry fish to chicks singly and frequently throughout the day. These young develop rapidly to about one-third adult weight, at which time they quit the nest site. At the other extreme, species that feed far offshore provide burrows for the chick and nest in large colonies on only a few off-shore islands. Chicks are visited at night by adults whose bills are adapted for carrying many fish. These chicks grow slowly and reach close to adult weight before leaving the nest. These patterns are repeated with considerable fidelity in the six-species alcid community of Northern Iceland, but southern hemisphere seabirds are, in general, differently organized.--Courtesy/ Paul A. Stewart.

Delius, Juan D. AGONISTIC BEHAVIOUR OF JUVENILE GULLS, A NEUROETHOLOGICAL STUDY. *Anim. Behav.* 21(2): 236-246, 4 figs. May 1973. *WR 149: 101*
[Univ. Durham, Durham, England.] *"Larus argentatus* and *L. fuscus."*

De Naurois, R., and J. Prevost. DISPOSITION HELICOIDALE DE L'INTESTIN CHEZ CERTAINES ESPECES DE PETRELS DU GENRE *PTERODROMA*. [THE HELICOIDAL ARRANGEMENT OF THE INTESTINE IN CERTAIN SPECIES OF PETRELS OF THE GENUS *PTERODROMA*.] *Alauda* 40(1): 93-97, illus. 1972. [From Biol. Abstr. 55(8), 1973. In French with English summ.] *WR 149: 101*
[Mus. Natl. Hist. Nat., Paris, France.]

Evans, Roger M., and Martin K. McNicholl. VARIATIONS IN THE REPRODUCTIVE ACTIVITIES OF ARCTIC TERNS AT CHURCHILL, MANITOBA. *Arct. J. Arct. Inst. North Am.* 25(2): 131-141, illus. 1972. [From Biol. Abstr. 55(1), 1973. In English with French and Russian summ.] *WR 149: 101*
[Univ. Manitoba, Winnipeg, Canada.]

Erskine, Anthony J. THE GREAT CORMORANTS OF EASTERN CANADA. *Canadian Wildl. Serv. Occas. Pap.* 14. p. 6-21, illus. 1972. [From Biol. Abstr. 55(1), 1973.] *WR 149: 102*
"Phalacrocorax carbo."

Evans, R. M. SOME EFFECTS OF WATER LEVEL ON THE REPRODUCTIVE SUCCESS OF THE WHITE PELICAN AT EAST SHOAL LAKE, MANITOBA. *Canadian Field Nat.* 86(2): 151-153. 1972. [From Biol. Abstr. 55(2), 1973.] *WR 149: 102*
[Univ. Manitoba, Winnipeg, Manitoba, Canada.]

Goodman, Daniel. THE PALEOECOLOGY OF THE TOWER ISLAND BIRD COLONY: A CRITICAL EXAMINATION OF COMPLEXITY-STABILITY THEORY. *Ph.D. thesis, Ohio State Univ.* 174 p. 1972. [From Diss. Abstr. Int. B Sci. Eng. 33(11), 1973.] *WR 149: 102*
"Sula sula."

Grubb, Thomas C., Jr. COLONY LOCATION BY LEACH'S PETREL. *Auk* 90(1): 78-82. Jan. 1973. *WR 149: 102*
[Livingston Coll., Rutgers Univ., New Brunswick, N.J.] Leach's petrels *(Oceanodroma leucorhoa)* flying over the treetops of a nesting island in the dark were attracted to the playback of tape-recorded petrel calls and also to the scent of nest material.--Courtesy/ Paul A. Stewart.

Hakala, T., and M. Jokinen. [A POPULATION OF COMMON TERNS NESTING ON THE ROOF OF A FACTORY.] *Ornis Fenn.* 48: 135-137. 1971. [From Auk 90(1), 1973. In Finnish with English summ.] *WR 149: 102*

Huber, L. N. NOTES ON THE MIGRATION OF THE WILSON'S STORM PETREL *OCEANITES OCEANICUS* NEAR ENIWETOK ATOLL WESTERN PACIFIC OCEAN. *Notornis* 18: 38-42. 1971. [From Auk 90(1), 1973.] *WR 149: 102*

Hunt, George L., Jr. INFLUENCE OF FOOD DISTRIBUTION AND HUMAN DISTURBANCE ON THE REPRODUCTIVE SUCCESS OF HERRING GULLS. *Ecology* 53(6): 1051-1061, 7 figs. Autumn 1972. *WR 149: 102*
[Univ. Calif., Irvine.] Hatching success of herring gulls *(Larus argentatus)* was inversely related to the disturbance of colonies by picnickers, the disturbance presumably keeping the birds from their nests so their eggs were exposed too long to solar radiation. However, the survival of chicks was higher nearer sources of waste used for food, regardless of visits by picnickers.--Courtesy/ Paul A. Stewart.

Ingold, P. ZUR LAUTLICHEN BEZIEHUNG DES ELTERS ZU SEINEM KUEKEN BEI TORDALKEN *(ALCA TORDA)*. [*ON* THE PHONETIC RELATIONS BETWEEN ADULT AND CHICK RAZORBILLS *(ALCA TORDA)*.] *Behaviour* 45(1-2): 154-190, 29 figs. 1973. In German with English summ. *WR 149: 102*
[Zool. Inst. Univ., Basel, Switzerland.]

Jehl, Joseph R., Jr. THE DISTRIBUTION OF MARINE BIRDS IN CHILEAN WATERS IN WINTER. *Auk* 90(1): 114-135, 3 figs. Jan. 1973. *WR 149: 102*
[Nat. Hist. Mus., P.O. Box 1390, San Diego, Calif.] Observations on nearly 50 spp. of seabirds.--Courtesy/ Paul A. Stewart.

Jehl, Joseph R., Jr. STUDIES OF A DECLINING POPULATION OF BROWN PELICANS IN NORTHWESTERN BAJA CALIFORNIA. *Condor* 75(1): 69-79, 3 figs. Spring 1973. *WR 149: 102*
[Nat. Hist. Mus., P.O. Box 1390, San Diego, Calif.] Large scale reproductive failure was found in all colonies of brown pelicans *(Pelecanus occidentalis)*. Thin shelled eggs that break during incubation was the major factor in nesting failure. Shell thinning was inversely related to concentrations of DDT compounds in the egg yolk.--Courtesy/ Paul A. Stewart.

Jensen, R. A. C., and H. H. Berry. THE BLACK TERN *CHLIDONIAS NIGRA* (L.) IN SOUTH WEST AFRICA. *Madoqua* Ser. I, no. 5. p. 53-56, 3 pls. 1972. *WR 149: 103*
[Div. Nat. Conserv. & Tourism, Windhoek, South West Africa.]

Johnston, G. C. PREDATION BY SOUTHERN SKUA ON RABBITS ON MACQUARIE ISLAND. *Emu* 73(1): 25-26. Jan. 1973. *WR 149: 103*
[23 Cotteslow St., Lindisfarne, Tasmania, Australia.]

McLannahan, Heather M. C. SOME ASPECTS OF THE ONTOGENY OF CLIFF NESTING BEHAVIOUR IN THE KITTIWAKE *(RISSA TRIDACTYLA)* AND THE HERRING GULL *(LARUS ARGENTATUS)*. *Behaviour* 44(1-2): 36-88, 13 figs. + 2 pls. 1973. In English with German summ. *WR 149: 103*
[Univ. Liverpool, Liverpool, England.] Analysis of the behavioral peculiarities that enable kittiwakes to raise their young on narrow cliff ledges. For comparison parallel studies were made on both cliff and ground nesting herring gulls and some aspects of the ontogeny of the behavior involved were investigated.--From summ.

Meyerriecks, Andrew J. TOOL-USING BY A DOUBLE-CRESTED CORMORANT. *Wilson Bull.* 84(4): 482-483. Dec. 1972. *WR 149: 103*
[Univ. South Fla., Tampa.] A double-crested cormorant *(Phalacrocorax auritus)* used one of its shed feathers as a brush to place oil from its uropygial gland on its wing feathers.--Courtesy/ Paul A. Stewart.

Mills, J. A. THE INFLUENCE OF AGE AND PAIR-BOND ON THE BREEDING BIOLOGY OF THE RED-BILLED GULL *LARUS NOVAEHOLLANDIAE SCOPULINUS*. *J. Anim. Ecol.* 42(1): 147-162, 2 figs. Feb. 1973. *WR 149: 103*
[Wildl. Branch, Dep. Internal Affairs, Wellington, New Zealand.]

Müller-Schwarze, Dietland, and Christine Müller-Schwarze. DIFFERENTIAL PREDATION BY SOUTH POLAR SKUAS IN AN ADÉLIE PENGUIN ROOKERY. *Condor* 75(1): 127-131, 2 figs. Spring 1972. *WR 149: 103*
[Utah State Univ., Logan.] "The zone of close proximity between well-spaced skua nests and large penguin colonies serving as food territories for the skuas may actually be an area of maximum benefit for both species."--Courtesy/ Paul A. Stewart.

Nazarov, Yu. N., and V. I. Labzyuk. [SOME DATA ON THE BIOLOGY OF THE AUK *CEPPHUS CARBO* IN THE SOUTHERN PRIMOR'YE.] *Biol. Nauk.* 15(3): 32-35. 1972. [From Biol. Abstr. 55(10), 1973. In Russian.] *WR 149: 103*
[Far East State Univ., Vladivostok, USSR.]

Noseworthy, Cathryn, Sue Stoker, and Jon Lien. HABITAT PREFERENCES IN HERRING GULL CHICKS. *Auk* 90(1): 193-194. Jan. 1973. *WR 149: 103*
[Memorial Univ. Newfoundland, St. John's, Newfoundland, Canada.] Herring gull *(Larus argentatus)* chicks soon returned to the same type of vegetative cover from which they had just been removed.--Courtesy/ Paul A. Stewart.

Nyström, Mats. EXTINCTION, DISINHIBITION AND SPONTANEOUS RECOVERY OF THE PECKING RESPONSE IN YOUNG HERRING GULLS. *Behaviour* 45(3-4): 271-281, 4 figs. 1973. In English with German summ. *WR 149: 103*
[Lund Univ., Lund, Sweden.] Summary: Red, blue and white stimulus strips were repeatedly presented for 15 sec., with 15 sec. pauses between trials, to three different groups (N=10, 10 and 18, respective) of two-day old herring gulls. The pecking response to these colours gradually extinguished, requiring 121, 55 and 36 pecks in the respective group until the criterion (three consecutive trials of zero frequency) was reached. Since the blue and the red group revealed similar pretest frequency (before extinction) there was evidence for a flatter regression to the red stimulus. This was further supported by the similarity between the blue and the white group on other parameter values during extinction. The finding was taken as a partial explanation of the divergent

results obtained earlier concerning the peak colour preference in this species; investigations build around repeated stimulus presentations would favour a red preference. A test stimulus of different colour presented after complete extinction gave rise to a strong disinhibition of the response. There was a limited degree of stimulus generalization evident through disinhibitional effects toward darker achromatic stimuli presented after extinction to the white stimulus. The response showed an exponential rate of spontaneous recovery, reaching the original strength within about three hours. In general, the pecking response showed characteristics during extinction in common with responses studied hitherto.

Parslow, J. L. F., D. J. Jefferies, and H. M. Hanson. GANNET MORTALITY INCIDENTS IN 1972. *Mar. Pollution Bull.* 4(3): 41-43. Mar. 1973. *WR 149: 104*
[Nature Conservancy, Monks Wood Exp. Stn., Abbots Ripton, Huntingdon, England.] Abstract: Investigations of two incidents in 1972 on the east and west coasts of Britain involving the death of unusually large numbers of Gannets indicated that they were almost certainly unrelated. Concentrations of PCB were much higher in the livers of the birds from the west coast and may possibly have contributed to the death of some or all of them. One of these birds also contained an exceptionally high level of mercury in its liver.

Pearce, P. A. A WHITE-WINGED BLACK TERN SPECIMEN FROM CANADA. *Auk* 90(2): 420. Apr. 1973. *WR 149: 104*
[Canadian Wildl. Serv., P.O. Box 486, Frederickton, New Brunswick, Canada.] *"Chlidonias leucopterus."*--Courtesy/ Paul A. Stewart.

Pyle, Robert Michael. *LIMENITIS LORQUINI* (NYMPHALIDAE) ATTACKING A GLAUCOUS-WINGED GULL. *J. Lepid. Soc.* 26(4): 261. 1972. [From Biol. Abstr. 55(9), 1973.] *WR 149: 104*
[Monks Wood Exp. Stn., Abbots Ripton, England.]

Sanger, G. A. THE RECENT PELAGIC STATUS OF THE SHORT-TAILED ALBATROSS *(DIOMEDEA ALBATRUS)*. *Biol. Conserv.* 4: 189-193. 1972. [From Auk 90(1), 1973.] *WR 149: 104*
Counts of birds at the lone breeding colony on Torishima and pelagic sightings suggest that the world population of this rare species has inched up to perhaps 75 to 100 individuals.

Sanger, Gerald A. PELAGIC RECORDS OF GLAUCOUS-WINGED AND HERRING GULLS IN THE NORTH PACIFIC OCEAN. *Auk* 90(2): 384-393, 2 figs. Apr. 1973. *WR 149: 104*
[Northwest Fisheries Cent., 2725 Montlake Blvd. East, Seattle, Wash.] Glaucous-winged gulls *(Larus glaucescens)* and herring gulls *(L. argentatus)* were found to be more pelagic than had earlier been known to be true, having been found 500-600 miles from land.--Courtesy/ Paul A. Stewart.

Sealy, Spencer George. ADAPTIVE DIFFERENCES IN BREEDING BIOLOGY IN THE MARINE BIRD FAMILY ALCIDAE. *Ph.D. thesis, Univ. Mich.* 295 p. 1972. [From Diss. Abstr. Int. B Sci. Eng. 33(11), 1973.] *WR 149: 104*
"Synthliboramphus antiquum and *Brachyramphus marmoratum."*

Sloan, Norman F. STATUS OF BREEDING COLONIES OF WHITE PELICANS IN THE UNITED STATES THROUGH 1972. *Inland Bird Banding News* 45(3): 83-96. May-June 1973. *WR 149: 104*
[Mich. Tech. Univ., Houghton.] The current breeding population of *Pelecanus erythrorhynchos* is estimated at 33,690 birds--approximately that of a study made eight years ago. Increases are reported for California, Colorado, North Dakota, Oregon, South Dakota and Utah; but decreases are indicated for Montana, Nevada, and Texas.

Smith, Jean E., and Kenneth L. Diem. GROWTH AND DEVELOPMENT OF YOUNG CALIFORNIA GULLS *(LARUS CALIFORNICUS)*. *Condor* 74(4): 462-470, 4 figs. Winter 1972. *WR 149: 104*
[Carroll Coll., Helena, Mont.] Feather growth, increase in weight, and color changes of the soft parts are discussed.--Courtesy/ Paul A. Stewart.

Spaans, A. L. ON THE FEEDING ECOLOGY OF THE HERRING GULL *LARUS ARGENTATUS* PONT. IN THE NORTHERN PART OF THE NETHERLANDS. *Ardea* 59(3/4): 75-188, illus. 1971. [From Biol. Abstr. 54(11), 1972. In English with Dutch summ.] *WR 149: 105*
[Lands Bosebeheer, Paramaribo, Suriname.]

Udvardy, Miklos D. F., Constance S. De Beausset, and Mitzi Ruby. NEW TERN RECORDS FROM CARIBBEAN HONDURAS. *Auk* 90(2): 440-442. Apr. 1972. *WR 149: 105*
[Calif. State Univ., Sacramento.] Courtesy/ Paul A. Stewart.

Van Velzen, Willet T., and Richard D. Benedict. RECOVERIES OF ROYAL TERNS BANDED IN VIRGINIA / PART I. THE CARIBBEAN. *Raven* 43(3): 39-41, 1 fig. Sept. 1972. *WR 149: 105*
[Patuxent Wildl. Res. Cent., Laurel, Md.] *"Thalasseus maximus."*

Varoujean, Daniel H., and L. J. V. Compagno. MAGNIFICENT FRIGATEBIRDS IN MONTEREY BAY, CALIFORNIA. *Auk* 90(1): 192-193, 1 fig. Jan. 1973. *WR 149: 105*
[Moss Landing Marine Lab., Moss Landing, Calif.] *"Fregata magnificens."*

HAWKS & OWLS

Alford, John R. III, and Eric G. Bolen. A NOTE ON GOLDEN EAGLE TALON WOUNDS. *Wilson Bull.* 84(4): 487-489, 1 fig. Dec. 1972. *WR 149: 105*
[Tex. Tech Univ., Lubbock.] Golden eagles *(Aquila chrysaetos)* strike their prey with their talons and inflict talon wounds; thus the contention of stockmen that carcasses of eagle prey are free of talon punctures seems to be without validity.--Courtesy/ Paul A. Stewart.

Bezzel, Einhard. EINIGE DATEN ZUR ERNAEHRUNG OBERBAYERISCHER WALDOHREULEN *(ASIO OTUS).* [SOME NOTES ON THE FOOD OF THE LONG-EARED OWL *(ASIO OTUS)* IN SOUTHERN BAVARIA.] *Ans. Ornithol. Ges. Bayern* 11(2): 181-184. 1972. [From Biol. Abstr. 55(5), 1973. In German with English summ.] *WR 149: 105*
[Gateigst. 43, Garmisch-Partenkirchen, Germany.]

Borg, Karl, and G. Rockborn. *TRANSLATION:* A BRIEF REPORT ON VIRUS HEPATITIS IN THE EAGLE OWL. *Raptor Res.* 6(3): 106-107. Fall 1972. *WR 149: 105*
[Statens VeterinÄrmedicinska Anstalt, S-104 05 Stockholm 50, Sweden.] Translation of an appendix of an annual report of Statens VeterinÄrmedicinska Anstalt.

Brown, Leslie. THE BREEDING BEHAVIOUR OF THE AFRICAN HARRIER HAWK *POLYBOROIDES TYPUS* IN KENYA. *Ostrich* 43(3): 169-175. 1972. [From Biol. Abstr. 55 (9), 1973.] *WR 149: 105*
[P.O. Box 24916, Karen, Kenya.]

Brown, Woodward H. WINTER POPULATION TRENDS IN THE MARSH, COOPER'S AND SHARP-SHINNED HAWKS. *Am. Birds* 27(1): 6-7, 6 figs. Feb. 1973. *WR 149: 105*
[432 Tonawanda Dr., Des Moines, Iowa.] Summary: Analysis of 20 years' Christmas Bird Count reports shows a downward trend in the winter populations of the three species continuing until the early 1960s when there was a leveling off and finally an upturn. California, where there was greatly increased coverage in the later years, in addition to a higher frequency rate, played a large part in bringing about the recent increases.

Cooper, John E. BLOOD PARASITES FROM A RED-CHESTED OWLET *GLAUCIDIUM TEPHRONOTUM. Bull. British Ornithol. Club* 93(1): 25-26. Mar. 1973. *WR 149: 105*

Craig, Jerry. THE EAGLES, HAWKS AND FALCONS OF COLORADO. *Colo. Outdoors* 22 (2): 24-33, illus. Mar.-Apr. 1973. *WR 149: 105*
Includes descriptions, occurrences, and behavior of 15 spp. of raptors with an account of Colorado's raptor program.

Dunstan, Thomas C. RADIO-TAGGING FALCONIFORM AND STRIGIFORM BIRDS. *Raptor Res.* 6(3): 93-102, 4 figs. Fall 1972. *WR 149: 106*
[Western Ill. Univ., Macomb.] The radio-telemetric techniques described in this paper can be used to determine: (1) territory and home range, (2) daily activity rhythms, (3) habitat utilization, (4) nest location, (5) physiological measurements such as heart rate, core temperature, and respiration rate, (6) feeding habits, (7) post-fledging activities such as family relationships, dispersal, migration, and survival, (8) pesticide and parasite fluctuations in time, and (9) interspecific and intraspecific interactions. Based on 56 individuals of 17 spp. raptors.

Dunstan, Thomas C. A TAIL FEATHER PACKAGE FOR RADIO-TAGGING RAPTORIAL BIRDS. *Inland Bird Banding News* 45(1): 6-10, 2 figs. Jan.-Feb. 1973. *WR 149: 106*
[Western Ill. Univ., Macomb.] Conclusions: Miniature radio transmitters can be successfully sutured to the calamus or rachis of one or two central tail feathers without causing feather damage or unusual behavior. Nestlings, fledglings, and adults carried transmitter packages about equally well. Transmitters were dropped with the molt and entanglement with vegetation was minimized.

Dunstan, Thomas C., and Steve D. Sample. BIOLOGY OF BARRED OWLS IN MINNESOTA. *Loon* 44(4): 111-115, 3 figs. Winter 1972. *WR 149: 106*
[Western Ill. Univ., Macomb.] Chronology, nest sites, care of nestlings, and fledging and post-fledging period are major topics of discussion.

Emlen, John T. VOCAL STIMULATION IN THE GREAT HORNED OWL. *Condor* 75(1): 126-127, 1 fig. Spring 1973. *WR 149: 106*
[Univ. Wis., Madison.] A male great horned owl *(Bubo virginianus)* promptly hooted in response to the hooting of a female of the same species.--Courtesy/ Paul A. Stewart.

Flieg, G. M. UNUSUAL EGG PRODUCTION OF THE BARN OWL *(TYTO ALBA)* IN CAPTIVITY. *Raptor Res.* 6(3): 104. Fall 1972. *WR 149: 106*
[3868 Humphrey, St. Louis, Mo.] Results from one pair of barn owls. "In summary, nine clutches were produced in less than three years and 33 young were produced from about 70 eggs."

Flieg, G. M., and Paul R. Meppiel. AN ACCOUNT OF TRIO NESTING BY YEARLING SNOWY OWLS IN CAPTIVITY. *Raptor Res.* 6(3): 103. Fall 1972. *WR 149: 106*
[3868 Humphrey, St. Louis, Mo.]

Gailey, Janet, and Niels Bolwig. OBSERVATIONS ON THE BEHAVIOR OF THE ANDEAN CONDOR *(VULTUR GRYPHUS)*. *Condor* 75(1): 60-68, 9 figs. Spring 1973. *WR 149: 106*
[Okla. Univ., Norman.] Observations on breeding, feeding, drinking, and bathing.--Courtesy/ Paul A. Stewart.

Gates, John M. RED-TAILED HAWK POPULATIONS AND ECOLOGY IN EAST-CENTRAL WISCONSIN. *Wilson Bull.* 84(4): 421-433. Dec. 1972. *WR 149: 106*
[S. Dak. State Univ., Brookings.] Average winter density of red-tailed hawks *(Buteo jamaicensis)* was 0.39 per square mile; the breeding density was 0.54 per square mile. Nesting success was 65%, and the average number of young fledged was 1.1 per breeding pair. Ring-necked pheasants *(Phasianus colchicus)* were the chief item of prey, and redtail predation accounted for a significant percentage of year-round pheasant mortality.--From summ. Courtesy/ Paul A. Stewart.

Gatter, Wulf. HERBSTLICHE ZUGPLANBEOBACHTUNGEN AN GREIFVOEGELN (FALCONIFORMES) AM RANDECKER MAAR, SCHWAEBISCHE ALB. [SYSTEMATIC OBSERVATIONS OF AUTUMNAL MIGRATION OF BIRDS OF PREY (FALCONIFORMES) ACROSS THE REGION OF THE "RANDECKER MAAR," SUABIAN ALB.] *Anz. Ornithol. Ges. Bayern* 11(2): 194-209, illus. 1972. [From Biol. Abstr. 55(5), 1973. In English with German summ.] *WR 149: 106*
[Forsthaus, Schopfloch, Germany.] *"Accipiter nisus, Falco tinnunculus, F. peregrinus* and *Pernis apivorus."*

Gessaman, James A. BIOENERGETICS OF THE SNOWY OWL *(NYCTEA SCANDIACA)*. *Arctic Alp. Res.* 4(3): 223-238, illus. 1972. [From Biol. Abstr. 55(6), 1973.] *WR 149: 107*
[Utah State Univ., Logan.]

Goldman, Peter. SONG RECOGNITION BY FIELD SPARROWS. *Auk* 90(1): 106-113, 3 figs. Jan. 1973. *WR 149: 107*
[Ohio State Univ., Columbus.] Field sparrows *(Spizella pusilla)* did not respond to songs of other species, but they did respond to a synthetic song that resembled a real field sparrow song in tempo. When the song of a stranger was played near a territorial border, field sparrows responded with song; when the song of a stranger was played within the territories, birds responded with flights.—From summ. Courtesy/ Paul A. Stewart.

Grönlund, S., and H. Mikkola. [THE ECOLOGY OF *ASIO FLAMMEUS* AT ALAJOKI, FINLAND IN 1969.] *Suomenselän Linnut* 4: 68-76. 1969. [From Auk 90(1), 1973. In Finnish.] *WR 149: 107*

Harwin, Richard, and Joanna Harwin. RAPTOR TERRITORIES AT CATHEDRAL PEAK, NATAL. *Ostrich* 43(2): 73-76, illus. 1972. [From Biol. Abstr. 55(5), 1973.] *WR 149: 107*
[Combe, Norman Close, Highlands, Salisbury, Rhodesia.] *"Buteo rufofuscus, Aquila verreauxi,* and *Buteo buteo trizonatus."*

Hudec, Karel. DIE BRUTPLAETZE DES WANDERFALKEN *(FALCO PEREGRINUS)* AUF DEM HOEHENZUG CESKOMORAVSKA VRCHOVINA. [THE BREEDING AREAS OF THE PEREGRINE FALCON *(FALCO PEREGRINUS)* IN THE CESKOMORAVSKA VRCHOVINA HIGHLAND.] *Zool. Listy* 21(2): 157-163, illus. 1972. [From Biol. Abstr. 55(1), 1973. In German with English summ.] *WR 149: 107*
[Inst. Vertebr. Zool., Czech. Acad. Sci., Kvetna 8, Brno, Czechoslovakia.]

Itamies, Juhani, and Heimo Mikkola. THE DIET OF HONEY BUZZARDS *PERNIS APIVORUS* IN FINLAND. *Ornis Fenn.* 49(1): 7-10. 1972. [From Biol. Abstr. 55(6), 1973. In English with Finnish summ.] *WR 149: 107*
[Univ. Oulu, Oulu, Finland.]

Jennings, W. [NOTES ON A WINTERING GYRFALCON *FALCO RUSTICOLUS*.] *Vår Fågelvärld* 31: 1-8. 1972. [From Auk 90(2), 1973. In Swedish with English summ.] *WR 149: 107*

Jensen, R. A. C. THE STEPPE EAGLE *AQUILA NIPALENSIS* AND OTHER TERMITE-EATING RAPTORS IN SOUTH WEST AFRICA. *Madoqua* Ser. I, no. 5. p. 73-76. 1972. *WR 149: 107*
[Div. Nat. Conserv. & Tourism, Windhoek, South West Africa.]

Johnson, David, and James H. Enderson. ROADSIDE RAPTOR CENSUS IN COLORADO—WINTER 1971-72. *Wilson Bull.* 84(4): 489-490. Dec. 1972. *WR 149: 107*
[Colo. Coll., Colorado Springs.] Golden eagles *(Aquila chrysaetos)* were 2.9 times more abundant during the winter of 1971-72 than a decade earlier.—Courtesy/ Paul A. Stewart.

Kempf, C. LA REPRODUCTION DU HIBOU PETIT-DUC *OTUS SCOPS* EN ALSACE. [THE REPRODUCTION OF THE OWL *OTUS SCOPS* IN ALSACE.] *Alauda* 40(2): 154-157, illus. 1972. [From Biol. Abstr. 54(11), 1972. In French.] *WR 149: 107*

Lincer, Jeffrey L. THE EFFECTS OF ORGANOCHLORINES ON THE AMERICAN KESTREL *(FALCO SPARVERIUS* LINN.). *Ph.D. thesis, Cornell Univ.* 106 p. 1972. [From Diss. Abstr. Int. B Sci. Eng. 33(9), 1973.] *WR 149: 107*

Maes, J. P., and A. Magerat. LA REPRODUCTION DE L'EPERVIER *(ACCIPITER NISUS)* DANS LE SUD DU PAYS. [REPRODUCTION OF THE SPARROW HAWK *(ACCIPITER NISUS)* IN THE SOUTH OF BELGIUM.] *Aves* 8(6): 158-166, illus. 1971. [From Biol. Abstr. 55(3), 1973. In French.] *WR 149: 107*
[Rue L. Crasset 17E, Bois-de-Villers, Belgium.]

Maestrelli, John R. PROPAGATION OF BARN OWLS IN CAPTIVITY. *Auk* 90(2): 426-428. Apr. 1973. *WR 149: 108*
[Patuxent Wildl. Res. Cent., Laurel, Md.] This note reports breeding of barn owls *(Tyto alba pratincola)* in captivity and presents related information on this breeding.--Courtesy/ Paul A. Stewart.

Marti, Carl D. TEN YEARS OF BARN OWL PREY DATA FROM A COLORADO NEST SITE. *Wilson Bull.* 85(1): 85-86. Mar. 1973. *WR 149: 108*
[Weber State Coll., Ogden, Utah.] *Peromyscus, Microtus,* and *Reithrodontomys* formed the chief portion of the diet.--Courtesy/ Paul A. Stewart.

McClelland, B. Riley. AUTUMN CONCENTRATIONS OF BALD EAGLES IN GLACIER NATIONAL PARK. *Condor* 75(1): 121-123, 2 figs. Spring 1973. *WR 149: 108*
[Glacier National Park, West Glacier, Mont.] Maximum counts of bald eagles *(Haliaeetus leucocephalus)* were 179-373 during years 1965-70.--Courtesy/ Paul A. Stewart.

Mertz, D. B. THE MATHEMATICAL DEMOGRAPHY OF THE CALIFORNIA CONDOR POPULATION. *Am. Nat.* 105: 437-453. 1971. [From Auk 90(1), 1973.] *WR 149: 108*
"Gymnogyps californianus."

Mikkola, H. ZUR ERNAHRUNG DER SPERBEREULE *(SURNIA ULULA)* ZUR BRUTZEIT. [ON THE FEEDING HABITS OF THE HAWK OWL *(SURNIA ULULA)* AT THE NEST SITE.] *Angew. Ornithol.* 3: 133-141. 1971. [From Auk 90(2), 1973. In German.] *WR 149: 108*

Nansen, Robert P. FEEDING BEHAVIOR OF THE TURKEY VULTURE. *Point Reyes Bird Obs. Newsl.* no. 5. p. 5. Apr. 1973. *WR 149: 108*
"Cathartes aura."

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Olsson, V. [TERRITORY, HABITAT AND NEST SITE CHOICE OF SWEDISH WHITE-TAILED EAGLES, *HALIAEETUS ALBICILLA.*] *Vår Fågelvärld* 31: 89-95. 1972. [From Auk 90 (1), 1973. In Swedish with English summ.] *WR 149: 108*

Otteni, Lee C., Eric G. Bolen, and Clarence Cottam. PREDATOR-PREY RELATIONSHIPS AND REPRODUCTION OF THE BARN OWL IN SOUTHERN TEXAS. *Wilson Bull.* 84(4): 434-448, 1 fig. Dec. 1972. *WR 149: 108*
[Tex. Tech Univ., Lubbock.] A total of 11,408 food items was counted of which 85% was mammals, 13% birds, and 2% insects. Peak nesting activity was in March, and nesting continued two to ten months. Nesting success was 65.9%. There were 1.5 times as many young raised per pair in years when rodent populations were abundant as when they were relatively scarce.--Courtesy/ Paul A. Stewart.

Petrovic, Clive A., and Gregory S. Mills. SPARROW HAWK EATS EUROPEAN CORN BORER. *Wilson Bull.* 84(4): 491. Dec. 1972. *WR 149: 108*
[Ohio State Univ., Columbus.] The stomach of a sparrow hawk *(Falco sparverius)* trapped in April contained 71 larvae of the European corn borer *(Ostrinia nubilalis).*--Courtesy/ Paul A. Stewart.

Rea, Amadeo M. TURKEY VULTURES CASTING PELLETS. *Auk* 90(1): 209-210. Jan. 1973. *WR 149: 108*
[Prescott Coll., Prescott, Ariz.] *"Cathartes aura."*--Courtesy/ Paul A. Stewart.

Realini, Gianfranco. NIDIFICAZIONE DI ALBANELLA MINORE *(CIRCUS PYGARGUS* L.). [THE NESTING OF THE HEN-HARRIER *CIRCUS PYGARGUS* L.] *Riv. Ital. Ornitol.* 42(1/2): 182. 1972. [From Biol. Abstr. 55(1), 1973. In Italian.] *WR 149: 108*

Sauer, E. G. Franz. NOTES ON THE BEHAVIOR OF LAPPET-FACED VULTURES AND CAPE VULTURES IN THE NAMIB DESERT OF SOUTH WEST AFRICA. *Madoqua Ser. II* 2(63-68): 43-62, 17 figs. 1973. *WR 149: 109*
[Mus. Alexander Koenig, Bonn, Germany.] "This preliminary report presents data on the vultures' visits at the water holes and in communal areas, as well as descriptions of intra- and interspecific flock structures and the social status of the birds." [*Torgos tracheliotus* and *Gyps coprotheres.*]

Smeenk, C. OKOLOGISCHE VERGLEICHE ZWISCHEN WALDKAUZ *STRIX ALUCO* UND WALDOHREULE *ASIO OTUS.* [ECOLOGICAL COMPARISONS BETWEEN TAWNY OWL *STRIX ALUCO* AND LONG EARED OWL *ASIO OTUS.*] *Ardea* 60(1/2): 1-71, illus. 1972. [From Biol. Abstr. 55(5), 1973. In German with English summ.] *WR 149: 109*
[Rijksmus. Nat. Hist., Leiden, Netherlands.]

Snow, Carol. HABITAT MANAGEMENT SERIES FOR ENDANGERED SPECIES / REPORT NO. 1. AMERICAN PEREGRINE FALCON *FALCO PEREGRINUS ANATUM* AND ARCTIC PEREGRINE FALCON *FALCO PEREGRINUS TUNDRIUS.* *U.S. Bur. Land Manage. Tech. Note.* ii + 35 p. 15 Nov. 1972. Available from Director, Portland Service Center, Box 3861, Portland, Oreg. *WR 149: 109*
Major topics of discussion: Species description, distribution, status and population trend, life history, reproduction, habitat requirements, protective measures instituted, identification of limiting factors, and recommended management techniques.

Snow, Carol. HABITAT MANAGEMENT SERIES FOR ENDANGERED SPECIES / REPORT NO. 5. SOUTHERN BALD EAGLE *HALIAEETUS LEUCOCEPHALUS LEUCOCEPHALUS* AND NORTHERN BALD EAGLE *HALIAEETUS LEUCOCEPHALUS ALASCANUS.* *U.S. Bur. Land Manage. Tech. Note.* iii + 58 p., [4] figs. 15 Mar. 1973. Available from Director, Portland Service Center, Box 3861, Portland, Oreg. *WR 149: 109*
Major topics of discussion: Species description, distribution, status and population trend, life history, reproduction, habitat requirements, limiting factors, protective measures instituted, and recommended management techniques.

Soares, A. A. RAPINACEOS DE PORTUGAL: II. STRIGIFORMES. [RAPTORS OF PORTUGAL: II. STRIGIFORMES.] *Arq. Mus. Bocage* 3(5): 91-130, illus. 1971. [From Biol. Abstr. 54(11), 1972. In Portuguese with English summ.] *WR 149: 109*
[Mus. Bocage, Lisbon, Portugal.]

Steyn, Peter. FURTHER OBSERVATIONS ON THE BROWN SNAKE EAGLE. *Ostrich* 43(3): 149-164, illus. 1972. [From Biol. Abstr. 55(9), 1973.] *WR 149: 109*
[P.O. Box 9199, Bulawayo, Rhodesia.]

Sulkava, Pertti. DIE NISTZEITLICHE NAHRUNG DES RAUHFUSSKAUZES *AEGOLIUS FUNEREUS* IN FINNLAND 1958-67. [FOOD OF TENGMALM'S OWL *AEGOLIUS FUNEREUS* IN FINLAND DURING BREEDING.] *Ornis Fenn.* 48(3/4): 117-124. 1971. [From Biol. Abstr. 54(11), 1972. In German with Finnish and English summ.] *WR 149: 109*

Van Beusekom, C. F. ECOLOGICAL ISOLATION WITH RESPECT TO FOOD BETWEEN SPARROWHAWK AND GOSHAWK. *Ardea* 60(1/2): 72-96, illus. 1972. [From Biol. Abstr. 55(5), 1973. In English with Dutch summ.] *WR 149: 109*
[Rijksherbarium, Schelpenkade 6, Leiden, Netherlands.] *"Accipiter nisus* and *A. gentilis."*

Vernon, C. J. AN ANALYSIS OF OWL PELLETS COLLECTED IN SOUTHERN AFRICA. *Ostrich* 43(2): 109-124. 1972. [From Biol. Abstr. 55(5), 1973.] *WR 149: 109*
[Dep. Natl. Parks Wildl. Manage., Fort Victoria, Rhodesia.] *"Tyto alba* and *T. capensis."*

Vooys, K. H., and J. Wattel. "TROPISCHE" VARIETAET EINES DEUTSCHEN HABICHTS *(ACCIPITER GENTILIS).* ["TROPICAL" VARIANT OF A GERMAN GOSHAWK *(ACCIPITER GENTILIS).*] *J. Ornithol.* 113(2): 214-218, illus. 1972. [From Biol. Abstr. 55 (9), 1973. In German with English summ.] *WR 149: 109*
[Univ. Amsterdam, Amsterdam, Netherlands.]

Wendland, Victor. 14 JAEHRIGE BEOBACHTUNGEN ZUR VERMEHRUNG DES WALDKAUZES *(STRIX ALUCO L.)*. [FOURTEEN YEARS OBSERVATIONS ON THE REPRODUCTION OF A TAWNY OWL *(STRIX ALUCO L.)* POPULATION.] *J. Ornithol.* 113(3): 276-286, illus. 1972. [From Biol. Abstr. 55(5), 1973. In German with English summ.] *WR 149: 110*
[Ringbahnst. 79, Berlin, Germany.]

Wilbur, Sanford R. THE CALIFORNIA CONDOR IN THE PACIFIC NORTHWEST. *Auk* 90 (1): 196-198. Jan. 1973. *WR 149: 110*
[Patuxent Wildl. Res. Cent., Ojai, Calif.] Recently collected information indicates that condors *(Gymnogyps californianus)* were formerly permanent residents in the Pacific northwest.--Courtesy/ Paul A. Stewart.

Worthen, Gary L. HARLAN'S HAWK FROM UTAH: FIRST RECORD FOR THE GREAT BASIN. *Wilson Bull.* 85(1): 79. Mar. 1973. *WR 149: 110*
[Univ. Kans., Lawrence.] *"Buteo harlani."*--Courtesy/ Paul A. Stewart.

Young, C. M. THE SNOWY OWL MIGRATION OF 1971-72 IN THE SUDBURY REGION OF ONTARIO. *Am. Birds* 27(1): 11-12. Feb. 1973. *WR 149: 110*
[Laurentian Univ., Sudbury, Ontario, Canada.] *"Nyctea scandiaca."*

BLACKBIRDS, STARLINGS, CROWS

Alcock, John. THE FEEDING RESPONSE OF HAND-REARED RED-WINGED BLACKBIRDS *(AGELAIUS PHOENICEUS)* TO A STINKBUG *(EUSCHISTUS CONSPERSUS)*. *Am. Midl. Nat.* 89 (2): 307-313. Apr. 1972. *WR 149: 110*
[Ariz. State Univ., Tempe.]

Alsop, Frederick Joseph III. EGGSHELL THICKNESS FROM RED-WINGED BLACKBIRD *(AGELAIUS PHOENICEUS)* POPULATIONS WITH DIFFERENT EXPOSURES TO DDT. *Ph.D. thesis, Univ. Tenn.* 82 p. 1972. [From Diss. Abstr. Int. B Sci. Eng. 33(11), 1973.] *WR 149: 110*

Barus, Vlastimil, Bohumil Rysavy, Jindrich Groschaft, and Cestmir Folk. THE HELMINTH FAUNA OF *CORVUS FRUGILEGUS* L. (AVES, PASSERIFORMES) IN CZECHOSLOVAKIA AND ITS ECOLOGICAL ANALYSIS. *Prirodoved. Pr. Ustavu Cesk. Akad. Brne* 6(3): 1-53, illus. 1972. *WR 149: 110*
[Inst. Parasitol., Czech. Acad. Sci., Prague, Czechoslovakia.]

Bateman, Gary C., and Russell P. Balda. GROWTH, DEVELOPMENT, AND FOOD HABITS OF YOUNG PIÑON JAYS. *Auk* 90(1): 39-61, 1 fig. Jan. 1973. *WR 149: 110*
[Northern Ariz. Univ., Flagstaff.] At ten days of age piñon jays *(Gymnorhinus cyanocephalus)* averaged 9.2 times as heavy as on the day of hatching. Adult birds made only one feeding trip to the nest every 66 minutes, but 15-20 items were brought per trip. The dark skin of the young and placement of most nests on southerly exposures aid absorption of solar radiation; thus, the piñon jay is one of the earliest nesting passerines in the north temperate region.--From summ. Courtesy/ Paul A. Stewart.

Brown, Jerram L. BEHAVIOR ELICITED BY ELECTRICAL STIMULATION OF THE BRAIN OF THE STELLER'S JAY. *Condor* 75(1): 1-16, 15 figs. Spring 1973. *WR 149: 110*
[Univ. Rochester, Rochester, N.Y.] In laboratory tests it was determined what parts of the brain of Steller's jays *(Cyanocitta stelleri)* mediate certain displays and vocalizations.--Courtesy/ Paul A. Stewart.

Davis, Walter R. II, and Keith A. Arnold. FOOD HABITS OF THE GREAT-TAILED GRACKLE IN BRAZOS COUNTY, TEXAS. *Condor* 74(4): 439-446, 2 figs. Winter 1972. *WR 149: 110*
[Dallas Mus. Nat. Hist., Box 26193, Fair Park Station, Dallas, Tex.] The annual diet of *Cassidix mexicanus* was 80% animal material and 20% plant seeds. Adult males are more nearly granivorous and adult females are mostly insectivorous.--Courtesy/ Paul A. Stewart.

Francis, William J. BLACKBIRD NEST PLACEMENT AND NESTING SUCCESS. *Wilson Bull.* 85(1): 86-87. Mar. 1973. *WR 149: 111*
[Patuxent Wildl. Res. Cent., P.O. Box 2097, Sandusky, Ohio.] Nesting success of red-winged blackbirds *(Agelaius phoeniceus)* was not related to height of nests above ground.--Courtesy/ Paul A. Stewart.

Gradzinski, Zygmunt. DAILY FLIGHTS OF ROOKS *CORVUS FRUGILEGUS* LINNAEUS, 1758 AND JACKDAWS *CORVUS MONEDULA* LINNAEUS, 1758 WINTERING IN KRACOW. *Acta Zool. Cracov.* 16(18): 735-772, illus. 1971. [From Biol. Abstr. 55(10), 1973. In English with Polish and Russian summ.] *WR 149: 111*
[Jagellonian Univ., Cracow, Poland.]

Holm, Celia Haigh. BREEDING SEX RATIOS, TERRITORIALITY, AND REPRODUCTIVE SUCCESS IN THE RED-WINGED BLACKBIRD *(AGELAIUS PHOENICEUS)*. *Ecology* 54(2): 356-365. Early Spring 1973. *WR 149: 111*
[Route 2, Box 883, Flagstaff, Ariz.] All territorial males on the study area were adults, and the sex ratio was 3.0 females per male in 1966 and 2.7 in 1967. The number of young fledged per male increased with harem size. Harems were larger in cattail than bulrush territories and larger in areas with scattered rather than dense cattails. Nests in cattails had a higher fledging success than nests in bulrushes, and nests in sparse cattail cover fledged more young per nest than nests in denser growth. Nests were generally higher above water in cattails than in bulrushes; predation decreased with increasing height of nests.--From abstr. Courtesy/ Paul A. Stewart.

Keil, W. INTERNATIONAL COORDINATION OF RESEARCH WORK ON *STURNUS VULGARIS* L. *Bull. OEPP (Organ. Eur. Mediterr. Prot. Plant)* 6. p. 53. 1972. [From Biol. Abstr. 55(10), 1973. In (English) with French summ.] *WR 149: 111*
[Inst. Appl. Ornithol., Frankfurt/Main, Germany.] An international research program to study the basic biology, ecology and control of this bird pest is proposed.

Kushlan, J. A., and R. L. Paterson. WINTER RANGE OF THE RUSTY BLACKBIRD *(EUPHAGUS CAROLINUS)* IN FLORIDA. *Fla. Nat.* 45: 129-130. 1972. [From Auk 90 (2), 1973.] *WR 149: 111*

Orians, Gordon H. THE RED-WINGED BLACKBIRD IN TROPICAL MARSHES. *Condor* 75 (1): 28-42, 3 figs. Spring 1973. *WR 149: 111*
[Univ. Wash., Seattle.] The following are discussed: annual cycle, available food, territorial patterns, nest sites, clutch size, incubation, nestling food, growth of young, and survival of young.--Courtesy/ Paul A. Stewart.

Payne, Robert B. THE BREEDING SEASON OF A PARASITIC BIRD, THE BROWN-HEADED COWBIRD, IN CENTRAL CALIFORNIA. *Condor* 75(1): 80-99, 5 figs. Spring 1973. *WR 149: 111*
[Univ. Mich., Ann Arbor.] The following are discussed: the calendar of the brown-headed cowbird *(Molothrus ater)*, gonadal activity, laying season, breeding activity relative to age, number of eggs laid in a breeding season, molting seasons, body weight, cowbird breeding season relative to that of their hosts, energy requirements of breeding, cowbird breeding seasons in other areas, and breeding season of cowbirds relative to other parasitic species.--Courtesy/ Paul A. Stewart.

Rowher, Sievert A. A MULTIVARIATE ASSESSMENT OF INTERBREEDING BETWEEN THE MEADOWLARKS, *STURNELLA*. *Syst. Zool.* 21(3): 313-338, illus. 1972. [From Biol. Abstr. 55(8), 1973.] *WR 149: 111*
[Univ. Wash., Seattle.]

Schramm, Annemarie. KRAEHEN UND DOHLEN ALS WINTERGAESTE IM RAUM HANNOVER UND IHR SCHLAFPLATZ IN DER EILENRIEDE. [CROWS AND JACKDAWS AS WINTER GUESTS IN THE HANNOVER AREA AND THEIR SLEEPING QUARTERS IN THE EILENRIEDE FOREST.] *Beih. Ber. Naturhist. Ges. Hannover* 7. p. 213-229, illus. 1971. [From Biol. Abstr. 55 (8), 1973. In German.] *WR 149: 111*
[Ingbertweg 8, Hannover-Kirchrode, Germany.]

Stewart, Paul A. ESTIMATING NUMBERS IN A ROOSTING CONGREGATION OF BLACKBIRDS AND STARLINGS. *Auk* 90(2): 353-358. Apr. 1973. *WR 149: 112*
[USDA, Entomol. Res. Div., Oxford, N.C.] The numbers of birds in a roost were calculated by determining the amount of fecal material deposited overnight by individual birds and by all birds in the congregation. The congregation was calculated to contain 2,294,713 birds.

Thomas, Harriet P. STARLING RAISES BROWN-HEADED COWBIRD. *Auk* 90(1): 207. Jan. 1973. *WR 149: 112*
[32 Stoddard Way, Berkeley, Calif.] A starling *(Sturnus vulgaris)* was seen repeatedly feeding a large immature brown-headed cowbird *(Molothrus ater).*--Courtesy/ Paul A. Stewart.

Tomich, P. Quentin. NOTES ON NESTS AND BEHAVIOR OF THE HAWAIIAN CROW [I]. *Elepaio* 33(9): 92-95. Mar. 1973. *WR 149: 112*
First of three installments. Description of habitat, observation, and nest construction.

Tomich, P. Quentin. NOTES ON NESTS AND BEHAVIOR OF THE HAWAIIAN CROW [II]. *Elepaio* 33(10): 104-105. Apr. 1973. *WR 149: 112*
Eggs and incubation of *Corvus tropicus* are discussed in this second of three installments.

Tomich, P. Quentin. NOTES ON NESTS AND BEHAVIOR OF THE HAWAIIAN CROW [III]. *Elepaio* 33(11): 115-118. May 1973. *WR 149: 112*
Wariness, vocalization, foods and feeding and discussion are the topics of the third and final installment of this paper. This series of articles is reprinted from Pacific Sci. 25(4): 465-474. Oct. 1971.

Van Velzen, Willet T. DISTRIBUTION AND ABUNDANCE OF THE BROWN-HEADED COWBIRD. *Jack-Pine Warbler* 50(4): 110-113, 2 figs. Dec. 1972. *WR 149: 112*
[Patuxent Wildl. Res. Cent., Laurel, Md.] *"Molothrus ater."*

OTHER BIRDS

Ahlen, L. [THE TAWNY PIPIT *ANTHUS CAMPESTRIS* COLONIZING WOODLAND IN SCANIA.] *Vår Fågelvärld* 31: 9-15. 1972. [From Auk 90(2), 1973. In Swedish with English summ.] *WR 149: 112*

Appert, O. BEOBACHTUNGEN UEBER *THAMNORNIS* UND DIE UEBRIGEN SYLVIIDAE DER MANGOKYGEGEND IN SUEDWEST-MADAGASKAR. [OBSERVATIONS ON *THAMNORNIS* AND THE REMAINING SYLVIIDAE OF THE MANGOKY REGION IN SOUTHWEST MADAGASCAR.] *J. Ornithol.* 113(1): 76-85, illus. 1972. [From Biol. Abstr. 55(6), 1973. In German with French summ.] *WR 149: 112*
[CH-6106 Werthenstein, Lucerne, Switzerland.]

Behle, William H. CLINAL VARIATION IN WHITE-THROATED SWIFTS FROM UTAH AND THE ROCKY MOUNTAIN REGION. *Auk* 90(2): 299-306. Apr. 1973. *WR 149: 112*
[Univ. Utah, Salt Lake City.] *"Aeronautes saxatalis."*--Courtesy/ Paul A. Stewart.

Braillon, B. L'HIRONDELLE DE RIVAGE, *RIPARIA RIPARIA*, EN BASSE-NORMANDIE: LES COLONIES ET LEURS EFFECTIFS; BIOMETRIE DE L'AILE; REPRISES D'OISEAUX BAGUÉS. [THE BANK SWALLOW *(RIPARIA RIPARIA)* IN LOWER NORMANDY: THE COLONIES AND THEIR ESTABLISHMENT; BIOMETRY OF THE WING; RECOVERIES OF BANDED BIRDS.] *Cormoran* 1: 129-151. 1970. [From Auk 90(2), 1973. In French.] *WR 149: 112*

Brower, A. E. AN ABERRANTLY COLORED SAVANNAH SPARROW FROM MAINE. *Auk* 90(1): 206-207, 1 fig. Jan. 1973. *WR 149: 112*
[8 Hospital St., Augusta, Maine.] *"Ammodramus sandwichensis."*--Courtesy/ Paul A. Stewart.

Clinning, C. F., and W. R. Tarboton. NOTES ON THE DAMARA ROCKJUMPER, *ACHAETOPS PYCNOPYGIUS*. *Madoqua* Ser. I, no. 5. p. 57-61, 3 pls. 1972. *WR 149: 113*
[Div. Nat. Conserv. & Tourism, Windhoek, South West Africa.]

Collias, Elsie C., and Nicholas E. Collias. FURTHER STUDIES ON DEVELOPMENT OF NEST-BUILDING BEHAVIOUR IN A WEAVERBIRD *(PLOCEUS CUCULLATUS)*. *Anim. Behav.* 21(2): 371-382. May 1973. *WR 149: 113*
[Los Angeles County Mus. Nat. Hist., Los Angeles, Calif.] Abstract: Complete deprivation of nest materials for the first year significantly retarded development of weaving ability in yearling, male village weaverbirds. One male which reached 9 years of age and held territory in breeding colouration never learned to build a nest. Deprivation for the first year starting from 7 weeks of age had some retarding effect, significant only when deprived birds were matched by dominance rank with controls. The crude appearance of nests of yearling males is caused by lack of practice in selecting and preparing nest materials, but practice is necessary before the male can weave a nest. Prolonged deprivation during adult life had no effect on weaving ability if a male had learned to build nests during his first or second year.

Crome, F. H. J. THE RELATIONSHIP OF THE HELMETED AND YELLOW-TUFTED HONEYEATERS. *Emu* 73(1): 12-18, 3 figs. Jan. 1973. *WR 149: 113*
[CSIRO, c/o Tobacco Res. Inst., Marreba, Queensland, Australia.] *"Meliphaga cassidix* and *M. melanops."*

Dow, Douglas D. SEX RATIOS AND ORAL FLANGE CHARACTERISTICS OF SELECTED GENERA OF AUSTRALIAN HONEYEATERS IN MUSEUM COLLECTIONS. *Emu* 73(2): 41-50, 1 fig. Apr. 1973. *WR 149: 113*
[Univ. Queensland, St. Lucia, Queensland, Australia.]

DuPont, John E. NOTES FROM WESTERN SAMOA, INCLUDING THE DESCRIPTION OF A NEW PARROT-FINCH *(ERITHRURA)*. *Wilson Bull.* 84(4): 375-376 + 1 pl. Dec. 1972. *WR 149: 113*
[Del. Mus. Nat. Hist., Greenville.] Courtesy/ Paul A. Stewart.

Fleetwood, Raymond J. JACANA BREEDING IN BRAZORIA COUNTY, TEXAS. *Auk* 90 (2): 422-423. Apr. 1973. *WR 149: 113*
[Bur. Sport Fisheries & Wildl., Angleton, Tex.] *"Jacana spinosa."*--Courtesy/ Paul A. Stewart.

Fretwell, S. D. ECOLOGICAL STUDIES OF DICKCISSELS IN TEXAS. *Bull. Tex. Ornithol. Soc.* 5: 22-23. 1972. [From Auk 90(2), 1973.] *WR 149: 113*

Gal, Ioan Korodi. BEITRAEGE ZUR KENNTNIS DER BRUTBIOLOGIE UND BRUTNAHRUNG DER NEUNTOETER *(LANIUS COLLURIO* L.). [CONTRIBUTIONS TO THE KNOWLEDGE OF THE BREEDING BIOLOGY AND BROOD FEEDING OF THE RED-BACKED SHRIKE *(LANIUS COLLURIO* L.).] *Zool. Abh.* (Dresden) 30(2): 57-82, illus. 1969. [From Biol. Abstr. 54 (11), 1972. In German.] *WR 149: 113*
[Univ. Babe-Bolyai, Cluj, Romania.]

Gray, David B. WHINCHATS ON A DISUSED RAILWAY. *Bird Study* 20(1): 80-82, 1 fig. Mar. 1973. *WR 149: 113*
[2 Schaw Ave., Drongan, By Ayr, Ayrshire, Scotland.] *"Saxicola rubetra."*

Kerautret, L. NOTES SUR LE MILAN ROYAL *MILVUS MILVUS* DANS LE NORD-EST DE LA FRANCE. [NOTES ON *MILVUS MILVUS* IN NORTHEASTERN FRANCE.] *Alauda* 40(2): 158-162, illus. 1972. [From Biol. Abstr. 54(11), 1972. In French.] *WR 149: 113*
[42 Rue Abbaye Pres, Douai, France.]

Martin, Stephen G. DISTRIBUTION AND STATUS / BELL'S AND WHITE-EYED VIREOS IN WISCONSIN. *Passenger Pigeon* 34(4): 143-158, 2 figs. Winter 1972. *WR 149: 113*
[Colo. State Univ., Fort Collins.]

Meisner, E. E., and E. V. Goloversi. [FIELD DETERMINATION TABLE OF PENGUINS (SPHENISCIDAE, NATANTES).] *Vestn. Zool.* 6(3): 48-54, illus. 1972. [From Biol. Abstr. 55(9), 1973. In Russian with English summ.] *WR 149: 114*

Morton, Martin L., Jorge E. Orejuela, and Susan M. Budd. THE BIOLOGY OF IMMATURE MOUNTAIN WHITE-CROWNED SPARROWS *(ZONOTRICHIA LEUCOPHRYS ORIANTHA)* ON THE BREEDING GROUND. *Condor* 74(4): 423-430, 5 figs. Winter 1972. *WR 149: 114*
[Occidental Coll., Los Angeles, Calif.] Hatching, development of nestlings, and parental attentiveness are discussed.--Courtesy/ Paul A. Stewart.

Olioso, G. OBSERVATIONS HIVERNALES SUR LE BRUANT DES NEIGES *PLECTROPHENAX NIVALIS* EN AVIGNON. [WINTER OBSERVATIONS ON *PLECTROPHENAX NIVALIS* IN AVIGNON.] *Alauda* 40(2): 171-174, illus. 1972. [From Biol. Abstr. 54(11), 1972. In French.] *WR 149: 114*
[5 Rue Bertrand-de-Nogayrol, Avignon, France.]

Orford, Noel. BREEDING DISTRIBUTION OF THE TWITE IN CENTRAL BRITAIN. *Bird Study* 20(1): 50-62, 1 fig. Mar. 1973. *WR 149: 114*
[9 Balmoral Ave., Hyde, Cheshire, England.] Parts one and two of a 3-part report.

Paynter, Raymond A., Jr. NOTES ON THE FURNARIID *AUTOMOLUS (HYLOCRYPTUS) ERYTHROCEPHALUS*. *Bull. British Ornithol. Club* 92(6): 154-155, 1 fig. Dec. 1972. *WR 149: 114*
Includes a sonagram of this bird that is confined to the subtropical western slopes of the Andes.

Phillips, Allan R., Steven Speich, and William Harrison. BLACK-CAPPED GNATCATCHER, A NEW BREEDING BIRD FOR THE UNITED STATES; WITH A KEY TO THE NORTH AMERICAN SPECIES OF *POLIOPTILA*. *Auk* 90(2): 257-262. Apr. 1973. *WR 149: 114*
[Apartado Postal 19-138, Mexico, Mexico.] *"Poliptila nigriceps."*--Courtesy/ Paul A. Stewart.

Phillips, J. S. STONECHATS IN YOUNG FORESTRY PLANTATIONS. *Bird Study* 20(1): 82-84. Mar. 1973. *WR 149: 114*
[73 Whitletts Rd., By Ayr, Ayrshire, Scotland.] *"Saxicola torquata."*

Ruge, K. ZUR BIOLOGIE DES DREIZENSPECHTES *PICOIDES TRYDACTYLUS* L. [ON THE BIOLOGY OF THE THREE-TOED WOODPECKER *PICOIDES TRYDACTYLUS*.] *Ornithol. Beob.* 68: 256-271. 1971. [From Auk 90(1), 1973. In German with English summ.] *WR 149: 114*

Ryabov, V. F., and Z. Ya. Ivanova. [ECOLOGY OF THE GREAT BUSTARD IN NORTHERN KAZAKHSTAN.] *Vestn. Mosk. Univ. Ser. 6 Biol. Pochvoved.* 26(5): 23-31, illus. 1971. [From Biol. Abstr. 55(10), 1973. In Russian.] *WR 149: 114*
[Moscow State Univ., Moscow, USSR.] *"Otis tarda."*

Schodde, R., and J. L. McKean. DISTRIBUTION, TAXONOMY AND EVOLUTION OF THE GARDENER BOWERBIRDS *AMBLYORNIS* SPP IN EASTERN NEW GUINEA WITH DESCRIPTIONS OF TWO NEW SUBSPECIES. *Emu* 73(2): 51-60, 2 figs. Apr. 1973. *WR 149: 114*
[CSIRO, P.O. Box 84, Lyneham, Australia.]

Schwartz, Paul. *MICRASTUR GILVICOLLIS*, A VALID SPECIES SYMPATRIC WITH *M. RUFICOLLIS* IN AMAZONIA. *Condor* 74(4): 399-415, 8 figs. Winter 1972. *WR 149: 114*
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[Tex. A&M Univ., College Station.] Abstract: A design for a transmitter capable of relaying core temperatures from free-ranging snakes is presented. The transmitter consists of a pulse generator, switch, RF oscillator, and antenna. The completed system is compacted, encapsulated in paraffin and latex, and force-fed to the snake. The transmitter weighs approximately 15 gm, and our models have operated for as long as two months on two 1.35-v cells. Maximum transmission distance observed was 210 m (taken as the point where the signal was first detected across open terrain) from within a snake's body.--Courtesy/ Paul A. Stewart.

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[Univ. Okla., Norman.] Abstract: Radio transmitters were force fed to western diamondback rattlesnakes, *Crotalus atrox*, that were released and followed in their natural habitat in Southwestern Oklahoma. Movements, behavior, and ecology of these snakes were studied for a two year period. The activity periods of *C. atrox* fluctuated seasonally as animals moved during mid-day (winter), early

morning and late evening (spring and fall), and mid-night (summer). Migrations to and from the dens occurred in spring and fall. Summer ranges were basically the same each year and were located 1-2 km from the den. Rattlesnakes did not wander randomly but moved on directed courses. Results from orientation tests lead us to conclude that *C. atrox* can use solar cues and that they can use these to learn directional goals.

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